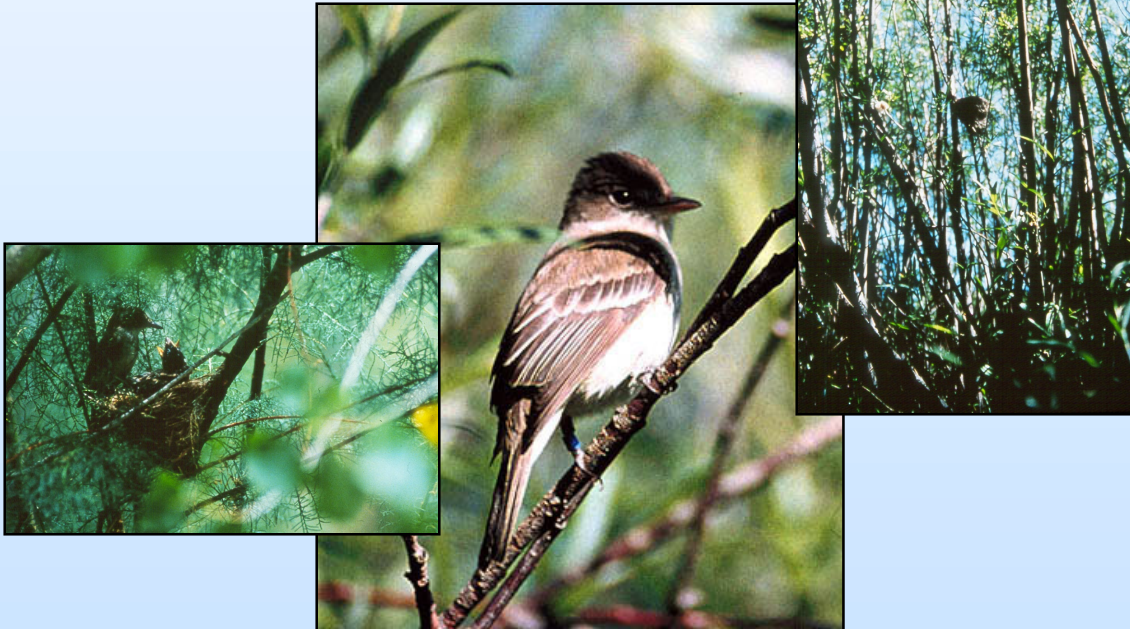


# **DESIGNATION OF CRITICAL HABITAT FOR THE SOUTHWESTERN WILLOW FLYCATCHER**

## **DRAFT ENVIRONMENTAL ASSESSMENT**

**April 2005**



**U.S. Fish and Wildlife Service**



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## **LEAD AGENCY:**

Department of the Interior -  
U.S. Fish and Wildlife Service

## **COOPERATING AGENCIES:**

Arizona Game and Fish Department  
U.S. Army Corps of Engineers (USACE), South Pacific Division

### **Contact Person:**

Steve Spangle, Field Supervisor  
U.S. Fish and Wildlife Service  
AZ Ecological Services Office  
2321 West Royal Palm Road, Suite 103  
Phoenix, AZ, 85021  
602-242-2513 (fax)

## **SUMMARY**

The purpose of this Environmental Assessment (EA) is to identify and disclose the environmental consequences resulting from the Proposed Action of re-designating critical habitat for the southwestern willow flycatcher, a subspecies listed as endangered under the Endangered Species Act (ESA). The need for the Proposed Action is to comply with the ESA and a District Court order to issue a final rule on critical habitat designation for the southwestern willow flycatcher. Three alternatives were considered: Alternative A – Essential Habitat; Alternative B – Exclusions; and the No Action Alternative. Alternative A would designate approximately 376,225 acres along selected stream segments as critical habitat within Arizona, California, Colorado, Nevada, New Mexico, and Utah. Alternative B is similar to Alternative A, except that approximately 30,445 acres would be excluded from consideration as critical habitat. Excluded areas include areas managed under Habitat Conservation Plans (HCPs), and areas controlled and managed by the Department of Defense (DoD). National wildlife refuges managed by the U.S. Fish and Wildlife Service (USFWS), state wildlife areas, pending HCPs, and areas with tribal management plans are not currently excluded but may be in the final rule. Thus, Alternative B would designate approximately 345,780 acres as essential habitat. The No Action Alternative is required by the National Environmental Policy Act (NEPA) for comparison to the other alternatives analyzed in this EA.

The environmental issues, identified by federal agencies and the public during the public scoping period and during resource analysis, included concerns regarding the impacts of critical habitat

designation on soils, vegetation, wildlife, water resources, wildland fire management, livestock grazing, land management and use, recreation, public health and safety, tribal trust resources, environmental justice and national security.

The designation of critical habitat for southwestern willow flycatcher would not have any direct impacts on the environment: designation would not impose land use restrictions nor would it prohibit land use activities. However, the action alternatives would: 1) increase the number of re-initiated ESA section 7 consultations for on-going projects within designated critical habitat; 2) increase the number of additional section 7 consultations for proposed projects within designated critical habitat; 3) maintain southwestern willow flycatcher critical habitat primary constituent elements; 4) indirectly increase the likelihood of greater expenditures of time, federal funds by government agencies to develop measures to prevent both adverse affects and adverse modification to maintain critical habitat; and 5) indirectly increase the likelihood of greater expenditure of non-federal funds by project proponents to complete section 7 consultations and to develop reasonable and prudent alternatives (as a result of adverse modifications) to maintain designated critical habitat.

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## **1.0 CHAPTER ONE – PURPOSE OF AND NEED FOR ACTION**

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The U.S. Fish and Wildlife Service (USFWS) is proposing to re-designate critical habitat for the southwestern willow flycatcher (*Empidonax traillii extimus*) (hereafter referred to as *E. traillii extimus* or flycatcher). The subspecies was listed on February 27, 1995 as endangered under the Endangered Species Act of 1973 as amended (ESA). Critical habitat designation is required by the ESA for listed species. Critical habitat was initially designated for the flycatcher on July 22, 1997 (62 Federal Register [FR] 39129)). The U.S. Court of Appeals Tenth Circuit set aside this designation on May 11, 2001 because of a faulty economic analysis, and instructed the USFWS to issue a new critical habitat designation. The U.S. District Court of New Mexico subsequently remanded the case to the USFWS to issue a proposed critical habitat designation by September 30, 2004 and publish a final rule no more than 1 year later. USFWS published the Proposed Rule for Designation of Critical Habitat for Southwestern Willow Flycatcher on October 12, 2004 (69 FR 60706).

This environmental assessment (EA) presents the purpose of and need for critical habitat designation, the Proposed Action and alternatives, and an evaluation of the direct, indirect, and cumulative effects of the alternatives pursuant to the requirements of the National Environmental Policy Act of 1969 (NEPA) as implemented by the Council on Environmental Quality regulations (40 CFR 1500, et seq.) and according to the Department of the Interior (DOI) NEPA procedures. The scope of the EA includes issues and resources identified in the scoping process within the subspecies' nesting range including portions of California, Arizona, Nevada, Utah, Colorado, New Mexico and Texas. Note that Texas, though within the flycatcher historic range and possibly within its present range, has no known territories at present. No critical habitat has been identified within this state, and thus, no analysis of impacts of designating critical habitat was made regarding Texas in this document.

This EA will be used by the USFWS to decide whether or not critical habitat will be designated as proposed, if the Proposed Action requires refinement, or if further analyses are needed through preparation of an environmental impact statement (EIS). If the Proposed Action is selected as described, or with minimal changes, and no further environmental analyses are needed, then a Finding of No Significant Impact (FONSI) would be the appropriate conclusion of this process. A FONSI would then be prepared for the EA.

### ***1.1 INTRODUCTION***

#### **1.1.1 PURPOSE OF THE ACTION**

Preservation of the habitat of an endangered species is a crucial element for the conservation of that species. A primary purpose of the ESA is to "provide a means whereby the ecosystems upon which endangered species and threatened species may be conserved" (section 2[b]). The purpose of critical habitat designation as specified in the ESA is to provide protection of habitat that is essential to the conservation of listed species. The purpose of this Proposed Action is to re-designate critical habitat for the flycatcher, a subspecies listed as endangered under the ESA. Critical habitat designation identifies geographic areas that are essential for conservation of the flycatcher and that may also require special management. The designation also describes the physical and biological features that constitute critical habitat known as the Primary Constituent Elements (PCEs).

### 1.1.2 NEED FOR THE ACTION

The Proposed Action is needed to comply with the ESA and to comply with a U.S. District Court order to issue a final rule on critical habitat designation for the flycatcher. Habitat protection and management is needed for the conservation of the flycatcher, as threats to the habitat of the flycatcher were primary reasons for listing the subspecies as endangered (60 FR 10694). The stated goal of the ESA is "...to conserve the ecosystems upon which the listed species [southwestern willow flycatcher] depends". The critical habitat provisions of the ESA were intended to address the habitat requirements of listed species.

## 1.2 BACKGROUND

### 1.2.1 ECOLOGICAL CONSIDERATIONS

The flycatcher (*E. traillii extimus*) is a small passerine bird, approximately 15 centimeters (cm) (5.75 inches) in length. It is one of four subspecies of the willow flycatcher recognized in North America (Hubbard 1987, Unitt 1987, Browning 1993). The flycatcher's nesting range includes southern California, Arizona, New Mexico, western Texas, southwestern Colorado, southern portions of Nevada and Utah, and extreme northwestern Mexico (Hubbard 1987, Unitt 1987, Wilbur 1987). During the nesting season, the subspecies occurs in riparian habitats along rivers, streams, open water, cienegas, marshy seeps, or saturated soil where dense growths of willow (*Salix* spp.), baccharis (*Baccharis* spp.), arrowweed (*Pluchea* spp.), tamarisk (*Tamarix* spp.) or other plants are present, sometimes with a scattered overstory of cottonwood (*Populus* spp.) (Grinnell and Miller 1944, Phillips 1948, Zimmerman 1970, Whitmore 1977, Hubbard 1987, Unitt 1987, Whitfield 1990, Brown and Trosset 1989, Brown 1991, Sogge et al. 1997). These riparian communities, which tend to be rare and widely separated, provide nesting, foraging, and migratory habitat for the flycatcher. *E. traillii extimus* is an insectivore that forages within and occasionally above dense riparian vegetation, taking insects on the wing and sally-gleaning them from foliage (Wheelock 1912, Bent 1960).

*E. traillii extimus* nests in dense riparian vegetation approximately 4–7 meters (m) (13–23 feet) tall, often with a high percentage of canopy cover. Historically, *E. traillii extimus* nested primarily in willows, with a scattered overstory of cottonwood (Grinnell and Miller 1944, Phillips 1948, Whitmore 1977, Unitt 1987, Sogge et al. 1997a). In addition to nesting in riparian woodland vegetation consisting of willows, arrowweed, tamarisk, "or other species", flycatchers nest almost exclusively in coast live oaks (*Quercus agrifolia*) on the Upper San Luis Rey River in San Diego County, California, an atypical habitat which may be defined as an oak "riparian woodland." Following modern changes in riparian plant communities in the Southwest, *E. traillii extimus* still nests in willows where available but is also known to nest in areas dominated by tamarisk and Russian olive (*Elaeagnus angustifolia*) (Zimmerman 1970, Hubbard 1987, Brown 1988). Sedgwick and Knopf (1992) found that sites selected as song perches by male willow flycatchers in higher-elevation scrub willow habitats exhibited higher variability in shrub size than did nest sites and often included large central shrubs. Habitats not selected for either nesting or singing were narrower riparian zones, with greater distances between willow patches and individual willow plants. At lower elevations in the Southwest, flycatchers typically occupy riparian forests dominated by mixtures of willow and tamarisk exhibiting a median height of 8.5 m (26 feet; range 3-24 m [9-75 feet]; Hatten and Paradzick 2003, Paradzick and Woodward 2003:22).

Large-scale losses of wetlands have occurred in the Southwest, particularly the cottonwood-willow riparian habitat of the flycatcher (Phillips et al. 1964, Johnson and Haight 1984, Katibah 1984, Johnson et al. 1987, Unitt 1987, General Accounting Office 1988, Dahl 1990, State of Arizona 1990). Changes in the riparian plant community have reduced, degraded, and eliminated nesting habitat for the flycatcher, curtailing its distribution and numbers (Serena 1982, Cannon and Knopf 1984, Taylor and Littlefield 1986, Unitt 1987, Schlorff 1990). Habitat losses and changes have occurred and continue to occur because of urban, recreational, and agricultural development; wildland fire; water diversion and impoundment; stream channelization; livestock grazing; and replacement of native habitats by introduced plant species (see 58 FR 39495 and Tibbitts et al. 1994 for detailed discussions of threats and impacts).

Brood parasitism by the brown-headed cowbird (*Molothrus ater*) is a threat to the flycatcher at some sites (Rowley 1930, Garret and Dunn 1981, Unitt 1987, Sogge 1995a and 1995b, Whitfield and Strong 1995, Sferra et al. 1997), while parasitism does not appear to be a threat at others (USFWS 2002, Rothstein et al. 2003). Although some host species seem capable of simultaneously raising both cowbirds and their own chicks, this is relatively uncommon with flycatchers. Of the hundreds of flycatcher nests monitored throughout the Southwest between 1988 and 2004, there are in excess of 20 known cases where flycatchers successfully fledged both flycatchers and cowbirds (personal communication, Charles Paradzick, Arizona Game and Fish Department, Phoenix; Koronkiewicz et al. 2004). In most cases, cowbird parasitism causes complete flycatcher nest failure or the successful rearing of only cowbird chicks (Brown 1988, Whitfield 1990, Whitfield and Strong 1995, Sogge 1995a and 1995b, Maynard 1995, Sferra et al. 1997).

In a review of historical and contemporary records of *E. traillii extimus* throughout its range, Unitt (1987) noted that the subspecies has "declined precipitously" and that "the population is clearly much smaller now than 50 years ago." He believed the total was "well under" 1000 pairs, more likely 500 (Unitt 1987). Some nesting groups monitored since that time have continued to decline (Whitfield 1990, Brown 1991, Sogge and Tibbitts 1992, Whitfield and Laymon, unpublished data) and 65 nesting sites have been extirpated since 1993 (Sogge et al. 2003b).

Since 1992, more than 800 historic and new sites have been surveyed range-wide to document the population size of the flycatcher (USFWS, unpublished data). The current known population of flycatchers based on data collected from 1993-2002 is estimated at 1,153 territories in five states (Sogge et al. 2003a). Rangewide totals do not exist for 2003, but current information from Arizona and New Mexico indicates that flycatcher abundance and distribution appear to be stable (Smith et al. 2004). Nevertheless, this is a critical population status because most nesting sites host five or fewer territories. Approximately 20% of the sites are comprised of territories with only single, unmated individuals.

The distribution of nesting sites is highly fragmented, often separated by considerable distances. For example, the straight-line distance between the nesting flycatcher site at Theodore Roosevelt Lake (Gila County, Arizona) and the nearest known nesting site on the Verde River (Yavapai County) is approximately 48 kilometers (km) (30 miles). The next nearest nesting site is on the Gila River at approximately 62 km (39 miles). Range-wide survey efforts have yielded positive results in fewer than 10% of surveyed locations. Moreover, survey results reveal a consistent range-wide pattern; the flycatcher population as a whole is composed of extremely small, widely separated nesting groups or unmated flycatchers.

### 1.2.2 PREVIOUS FEDERAL ACTIONS

On July 23, 1993, the USFWS published a proposal to list *E. traillii extimus* as endangered with critical habitat (58 FR 39495). The USFWS published a final rule to list the subspecies as endangered on February 27, 1995 (60 FR 10694), but deferred the designation of critical habitat until July 23, 1995, citing issues raised in public comments, new information, and the lack of the economic information necessary to perform the required economic analysis.

During and following a listing moratorium imposed by Congress from April 1995 to April 1996, the USFWS took no action on the proposal to designate critical habitat due to resource constraints. On March 20, 1997, the U.S. District Court of Arizona ordered the USFWS to designate critical habitat for the flycatcher within 120 days. On July 3, 1997, the Court clarified that order, noting that the 120-day timeframe was provided for the USFWS to make a decision as to whether or not to designate critical habitat and not to make a substantive determination of designation. A final rule designating critical habitat for southwestern willow flycatcher was issued on July 22, 1997 (62 FR 39129).

On May 11, 2001 the U.S. Court of Appeals Tenth Circuit set aside the critical habitat designation due to a rejection of the supporting economic analysis. Subsequently the U.S. District Court for New Mexico directed the USFWS to issue a proposed critical habitat designation by September 30, 2004 and publish a final rule no more than one year later.

### 1.3 CRITICAL HABITAT

Section 4(a)(3) of the ESA states that critical habitat shall be designated to the maximum extent prudent and determinable and that such designation may be revised periodically, as appropriate. Section 4(b)(2) of the ESA requires that critical habitat designation be based on the best scientific information available and that economic and other impacts must be considered. Areas may be excluded from critical habitat designation if it is determined that the benefits of excluding them outweigh the benefits of their inclusion, unless failure to include the areas in critical habitat would result in extinction of the species.

Critical habitat is defined in section 3(5)(A) of the ESA as:

"(i) the specific areas within the geographical area occupied by the species, at the time it is listed in accordance with the provisions of section 4 of this Act, on which are found those physical and biological features (I) essential to the conservation of the species and (II) which may require special management considerations or protection; and

(ii) specific areas outside the geographical area occupied by the species at the time it is listed in accordance with the provisions of section 4 of this Act, upon a determination by the Secretary that such areas are essential for the conservation of the species."

Section 3(5)(C) also states that critical habitat "shall not include the entire geographical area which can be occupied by the threatened or endangered species" except when the Secretary of the Interior determines that the areas are essential for the conservation of the species.

"Conservation means the use of all methods and procedures that are necessary to bring an endangered or a threatened species to the point at which listing under the Act is no longer necessary" (50 CFR §424.02[c]). Conservation in this context also includes designation of critical habitat where necessary to prevent possible extinction of the flycatcher and to provide for

the recolonization of previously occupied habitat in order to be consistent with the goals of the Recovery Plan.

Section 7(a)(2) of the ESA requires federal agencies to consult with the USFWS to "insure that any action authorized, funded, or carried out by such agency ... is not likely to jeopardize the continued existence of any endangered species or threatened species or result in the destruction or adverse modification of habitat of such species which is determined ... to be critical." Each agency is required to use the best scientific and commercial data available. This consultation process is typically referred to as section 7 consultation. Section 7 of the ESA does not apply to state, local, or private land unless there is a federal nexus (i.e., federal funding, authorization, permitting).

Designation of critical habitat can help focus conservation activities by identifying areas that are essential to the conservation of the species, regardless of whether they are currently occupied by the listed species. Designation of critical habitat also serves to alert the public and land management agencies to the importance of an area for conservation of a listed species. As described above, critical habitat receives protection from destruction or adverse modification through required consultation under section 7 of the ESA. Aside from the requirement to consult with the USFWS under section 7, the ESA does not impose any management or use restrictions on lands designated as critical habitat.

Recovery Plans outline actions considered necessary for species conservation, establish downlisting and delisting criteria, and provide an estimate of time and costs to implement recovery measures. Critical habitat contributes to the recovery strategy but does not by itself achieve recovery plan goals.

### **1.3.1 CONSEQUENCES OF DESIGNATION, SECTION 7 CONSULTATIONS**

The section 7 consultation process begins with a determination of effects on listed species and designated critical habitat by the federal action agency. If the federal action agency determines that there will be no effect on listed species or designated critical habitat, a section 7 consultation is not initiated and the proposed action is not altered or impacted by ESA considerations. If the federal action agency determines that listed species or designated critical habitat may be affected, then consultation with the USFWS is initiated.

Once it is determined that the proposed federal action may affect a listed species or critical habitat, the agency proposing the federal action and the USFWS usually engage in informal section 7 consultation. Informal consultation is a process for identifying affected species and critical habitat, determining potential effects, and exploring ways to modify the action to remove or reduce adverse effects to listed species or critical habitat (40 CFR §402.13). The informal section 7 consultation process concludes in one of two ways: 1) the USFWS concurs in writing that the proposed action is not likely to adversely affect listed species or critical habitat, and no further consultation is conducted; or 2) the USFWS issues a determination that adverse impacts are likely to occur, and formal consultation is initiated.

Formal consultation is initiated when it is determined that the proposed federal action is likely to adversely affect a listed species or critical habitat (40 CFR §402.14). Formal consultation concludes with a biological opinion issued by the USFWS on whether the proposed federal action is 1) likely to jeopardize the continued existence of a listed species, or 2) result in destruction or adverse modification of critical habitat or is not likely to jeopardize the continued

existence of a listed species or result in destruction or adverse modification of critical habitat (a non-jeopardy opinion) (40 CFR §402.14[h]). Independent analyses are made under both the jeopardy and the adverse modification standards.

A "non-jeopardy" opinion concludes consultation and the proposed action may proceed with ESA compliance. Section 9 of the ESA prohibits take of a listed species. The USFWS may reach a "non-jeopardy" opinion but take may be reasonably certain to occur. In this case, the USFWS may prepare an incidental take statement with reasonable and prudent measures to minimize take, and associated, mandatory terms and conditions that describe the methods for accomplishing the reasonable and prudent measures. Discretionary conservation recommendations may also be included in a biological opinion based on effects to species. Conservation recommendations are discretionary actions recommended by the USFWS. These recommendations may address minimizing adverse effects on listed species or critical habitat, identify studies or monitoring, or suggest how action agencies can assist species under their own authorities and section 7(a)(1) of the ESA. There are no ESA section 9 prohibitions for critical habitat.

In a biological opinion that results in a jeopardy or adverse modification conclusion, the USFWS develops mandatory reasonable and prudent alternatives to the proposed action. Reasonable and prudent alternatives are actions that the federal agency can take to avoid jeopardizing the continued existence of the species or adversely modifying critical habitat. The USFWS may develop reasonable and prudent alternatives ranging from slight project modifications to extensive redesign or relocation of the project. Reasonable and prudent alternatives must be consistent with the intended purpose of the proposed action and they also must be consistent with the scope of the federal agency's legal authority. Furthermore, reasonable and prudent alternatives must be economically and technically feasible. A biological opinion that results in a jeopardy finding, based on effects to the species, may also include an incidental take statement, reasonable and prudent measures, terms and conditions, and conservation recommendations. A biological opinion that results in an adverse modification finding, but no jeopardy finding, may include reasonable and prudent alternatives and conservation recommendations, but no incidental take statement or associated reasonable and prudent measures and terms and conditions.

### **1.3.2 PRIMARY CONSTITUENT ELEMENTS**

The USFWS is required to base critical habitat determinations on the best available scientific information (50 CFR 424.12). In determining what areas to designate as critical habitat, the USFWS considers those physical and biological features that are essential to the conservation of the species and that may require special management considerations or protection. Such requirements include but are not limited to the following: 1) Space for individual and population growth; 2) food, water, air, light, minerals, or other nutritional or physiological requirements; 3) cover or shelter; 4) sites for nesting, reproduction, rearing of offspring, germination, or seed dispersal; and 5) habitats that are protected from disturbance or are representative of the historic geographical and ecological distributions of a species. The USFWS is proposing to designate as critical habitat for the flycatcher, areas that provide, or with rehabilitation will provide, the above five physical and biological features along with the primary constituent elements of flycatcher critical habitat described below.

In general, the constituent elements of critical habitat for the flycatcher include the riparian vegetation ecosystem within the 100-year floodplain or flood-prone area, including areas where

dense riparian vegetation is not present, but through succession is expected to become established in the future. Flycatchers use riparian habitat for feeding, sheltering, and cover while nesting and migrating. Because riparian vegetation is prone to periodic disturbance (e.g., flooding), flycatcher habitat is ephemeral and its distribution is dynamic in nature (USFWS 2002). Flycatcher habitat may become unsuitable for nesting through maturation or disturbance, but suitable for migration or foraging (though this may be only temporary, and patches may cycle back into suitability for nesting) (USFWS 2002). Therefore, it is not realistic to assume that any given nesting habitat patch will remain suitable over the long-term, or persist in the same location (USFWS 2002). Over a five-year period, flycatcher habitat vegetation can, under optimum conditions, germinate, be used for migration or foraging, continue to grow, and eventually be used for nesting. Thus, habitat that is not currently suitable for nesting, but is useful for foraging and/or migration is considered essential. Feeding sites and migration stopover areas are essential components of the flycatcher's survival, productivity, and health, and they can also be areas where new nesting habitat develops as nesting sites are lost or degraded (USFWS 2002).

The six specific biological and physical features, otherwise referred to as the primary constituent elements (PCEs), include the following:

- Nesting habitat with trees and shrubs that include, but are not limited to, willow species and boxelder.
- Dense riparian vegetation with thickets of trees and shrubs ranging in height from 2 to 30 m (6 to 98 feet) with lower-stature thickets from 2 to 4 m (6 to 13 feet) tall found at higher elevation riparian forests and tall-stature thickets found at middle- and lower-elevation riparian forests;
- Areas of dense riparian foliage at least from the ground level up to approximately 4 m (13 feet) above ground, or dense foliage only at the shrub level, or as a low, dense tree canopy;
- Sites for nesting that contain a dense tree and/or shrub canopy (the amount of cover provided by tree and shrub branches measured from the ground, (i.e., a tree or shrub canopy with densities ranging from 50% to 100%));
- Dense patches of riparian forests that are interspersed with small areas of open water or marsh or shorter/sparser vegetation, that creates a mosaic that is not uniformly dense; patch size may be as small as 0.1 hectare (ha) (0.25 acre) or as large as 70 ha (175 acres); and
- A variety of insect prey populations, including but not limited to, wasps and bees (Hymenoptera), Flies (Diptera), beetles (Coleoptera), butterflies/moths and caterpillars (Lepidoptera), and spittlebugs (Homoptera).

### **1.3.3 CRITERIA FOR DEFINING ESSENTIAL HABITAT**

Initial input in developing the criteria for identifying areas essential to the conservation of the flycatcher came from the Southwestern Willow Flycatcher Final Recovery Plan (the Recovery Plan) (USFWS 2002). It was concluded that critical habitat alternatives should focus on the Recovery Plan's conservation strategy of protecting large populations as well as small populations with high connectivity. Large populations, centrally located, contribute the most to

meta-population stability, especially if other nesting populations are nearby. Large populations persist longer than small ones, and produce more individuals capable of emigrating to other populations or colonizing new areas. Smaller populations with a high level of connectivity between them can provide as much or more stability than a single isolated population with the same number of territories because of the potential to disperse colonizers throughout the network of sites.

The Recovery Plan defines a large population as a single site or collection of smaller sites believed to be in high connectivity that supports 10 or more territories. The Technical Subgroup of the Recovery Team concluded that a nesting site exhibits greatest stability when it contains at least 10 territories, particularly if the site is centrally located and other nesting populations are nearby. This conclusion was based upon the results of the Team's collective knowledge, distribution of current and potential flycatcher nesting areas, flycatcher dispersal and settlement patterns, genetic variation and exchange, and a population viability analysis. Degree of connectivity between populations was assigned based on known between-year, within-drainage movements of flycatchers (Luff et al. 2000; Kenwood and Paxton 2001; Paxton 2004). Most recorded between-year movements in central Arizona and the lower Colorado River occurred within the same drainage and ranged from 1.6 to 29 km (1 to 18 miles), but movements as far as 40 km (25 miles) have been documented (Luff et al. 2000; Kenwood and Paxton 2001; Paxton 2004). It is also recognized that individuals move between drainages (USFWS 2002:22), occasionally more than 220 km (137 miles; McKernan and Braden 2001:75). Based on this information, territories within a 29 km (18 miles) radius of each other were considered to have the necessary connectivity to be considered a large population in high connectivity with each other, and essential habitat occurring with 29 km (18 miles) of territories was proposed as critical habitat.

Locations throughout the subspecies range with documented large populations during the period 1993 to 2003 were identified. Data from this period are summarized by USFWS (2002), Sogge et al. (2003a, 2003b), Smith et al. (2004), and Williams (2004). Stream segments that include the essential components of flycatcher habitat adjacent to or between sites were identified and these segments are the basis of proposed critical habitat alternatives. Essential components of flycatcher habitat include foraging habitat, floater or non-breeder habitat, migratory habitat, regenerating habitat, streams, elevated groundwater tables, moist soils, flying insects, and other alluvial floodplain habitats. Information from the Recovery Plan, expert opinion, location of territories, habitat models, and the constituent elements of critical habitat were used to determine the boundaries of each river segment.

These segments represent the boundaries within which flycatcher habitat of all types is expected to persist over time as a function of the dynamic processes of riparian vegetation succession and river geomorphology and hydrology. As described in Section 1.3.2 above, flycatcher habitat (nesting, foraging, migrating, regenerating) over time is not expected to necessarily persist in the same locations or remain in the same conditions found today, but is expected to expand, contract, or change as a result of flooding, drought, inundation, and changes in floodplains and river channels (USFWS 2002).

Populations with high connectivity were not identified throughout the entire range of the subspecies (USFWS 2002). In the Amargosa, Santa Cruz, Hassayampa/Agua Fria, San Juan, San Francisco, Lower Rio Grande, and Powell Management Units there are no documented large sites ( $\geq 10$  territories), nor a combination of smaller sites (with a total of  $\geq 10$  territories) within 29



km (18 miles) of each other. As a result, the critical habitat alternatives do not contain stream segments in those Management Units.

Although a determination of what is essential to the conservation of the flycatcher represents the best approach toward identifying critical habitat, there were some areas where it was necessary to consider other factors due to the wide diversity and condition of habitats across the subspecies' range and the complexity of its needs. These other factors included: 1) the unique nature of the Coastal California Recovery Unit because of high connectivity across the entire unit and the fragmented nature of its riparian habitat; 2) Management Units where habitat is limited; and 3) key migratory habitat.

Unlike other Recovery Units in the flycatcher's nesting range, flycatcher populations in Coastal California exist on a greater number of streams and are almost all located in close proximity to one another. Because of this, stream section selection focused on identifying those providing constituent elements essential for the flycatcher while also exhibiting the greatest population stability. Therefore, dominant streams with the greatest number of territories (Santa Ynez, Santa Ana, Santa Margarita, and San Luis Rey Rivers) were selected in addition to many other smaller stream segments to allow for population connectivity, meta-population stability, growth, dynamic river processes, and protection against catastrophic loss. Consequently, there are stream segments in the Coastal California Recovery Unit, specifically in the Santa Clara, Santa Ana, and San Diego Management Units, where lone territories exist that fall within the 29 km (18 mile) connectivity radius of other territories, but are not being proposed as critical habitat. This is because the lone territories are not believed to be essential and/or contribute substantially to overall flycatcher population stability, particularly when considered within the entire range of habitats and stream segments selected in the Coastal California Recovery Unit.

The presence of riparian habitat to facilitate migration is essential for this neo-tropical migrant as it travels between Central and South America and the U.S. (USFWS 2002). For example, the Lower Colorado River below Davis Dam and the Middle Rio Grande are heavily used migratory corridors for flycatchers (Koronkiewicz et al. 2004, Yong and Finch 1997, Yong and Finch 2002). No stream segments are being proposed as critical habitat solely because they serve as migration corridors. Instead, stream segments that have been proposed as critical habitat are anticipated to serve a variety of flycatcher life-history functions, including use by migrant individuals.

The determination of lateral extent or width of proposed critical habitat for the flycatcher takes into account the dynamic nature of rivers and streams and the resulting changes in floodplain hydrology, riverine geomorphology, and therefore, riparian habitat over time. Location of riparian habitat is determined by river channel configuration, floodplain soils, subsurface water, floodplain shape, and a wide variety of flow events. These elements change through time. Rivers meander laterally within floodplains and are capable of moving from one side to the other. Floods periodically recharge aquifers and deposit and moisten fine floodplain soils that create seedbeds for riparian vegetation germination.

The methodology that was used to map existing stream channels and associated areas within the riparian zone was designed to identify those areas where dynamic river functions exist that create and maintain flycatcher habitat for nesting, feeding, sheltering, cover, dispersal, and migration. The three areas where lakebeds were included as proposed critical habitat have been identified using the maximum pool elevation (i.e., the high water mark) of the lake or reservoir in question.

Maximum pool elevations of Theodore Roosevelt Lake, Isabella Lake, and Alamo Lake are 656, 794, and 376 m (2151, 2605, and 1235 feet), respectively. The riparian zone is defined as the area directly influenced by active river functions adjacent to and surrounding a stream segment. The boundaries of the lateral extent of the riparian zone (i.e., the surrogate for the delineation of lateral boundaries of proposed critical habitat) were derived using two methods. Boundaries were either identified from existing digital data sources or created through expert visual interpretation of remote sensing data including aerial photographs and satellite imagery. The resulting boundary represents the riparian zone, which is either less than or equal to the width of the 100-year floodplain (see Methodology Section 3.1.4). Areas within the riparian zone or flood prone area that were generally omitted because they do not and will not exhibit primary constituent elements included buildings, man-made structures, agricultural fields, roads, and other types of permanent developments.

#### *1.4 SUMMARY OF ISSUES FROM SCOPING*

The following issues associated with designation of critical habitat were identified in comments received during the public comment period of January 21, 2004 through March 8, 2004. Comments were received from the public and federal, state, tribal and local agencies.

##### **1.4.1 AGRICULTURE**

- Compatibility and incompatibility of flycatcher habitat with grazing
- Potential harmful effects of critical habitat designation (and the Endangered Species Act in general) on the grazing industry and livestock operations
- Potential adverse effects of grazing and farming on the flycatcher including direct impacts to riparian habitat, secondary effects of chemical applications on agricultural land bordering flycatcher habitat, and effects of using genetically modified crops on adjacent lands

##### **1.4.2 NEED FOR CRITICAL HABITAT DESIGNATION**

- Need for critical habitat designation to protect the flycatcher and to comply with federal statute and regulation
- Critical habitat designation is unnecessary; Designation does not serve to protect endangered species and there are insufficient data to justify the need for critical habitat designation
- Critical habitat designation should use a broad approach for designation instead of a regionally specific approach. Comments also requested a regionally based designation versus a wide-ranging, extensive approach

##### **1.4.3 STRUCTURE OF CRITICAL HABITAT DESIGNATION**

- Critical habitat should be designed using a broad-brush rather than locally specific approach.
- Critical habitat should be designated considering local conditions and not a regionally comprehensive approach

- Elements to consider include historically occupied areas, areas identified in the 2002 Recovery Plan, stream segments, quality of riparian area; importance of buffer zones between designations and areas of urban development, and the importance of applying local knowledge
- Support or opposition to defining the lateral extent using the 100-year flood plain, riparian vegetation, watersheds and incorporating buffers
- Published and unpublished literature was suggested for review and consideration in the designation of critical habitat

#### **1.4.4 ECONOMICS**

- The cost of critical habitat designation including additional analysis, administration and implementation is passed onto taxpayers
- Critical habitat designation would have unfair impact on minority groups and tribes, rural communities, low-income families and certain groups within those communities
- Economic impacts to grazing, logging, mining, agriculture, land development, tourism and dam operations would result from critical habitat designation in certain areas
- Need for in-depth examination, site-specific basis evaluation of the social and economic impact of critical habitat designation

#### **1.4.5 RIPARIAN HABITAT AND VEGETATION**

- Critical habitat designation will protect riparian areas
- Riparian habitat constituents and conditions are highly variable across the subspecies range
- Effective riparian habitat mitigation measures and design standards for restoration are needed
- Native and non-native vegetation can serve as habitat
- Exotic and invasive species management, control and eradication may be affected by designation

#### **1.4.6 SOCIAL**

- Extinction of any species is a loss to humanity
- Respecting tribal sovereign rights is important in the process of critical habitat designation
- Health and safety concerns were raised including potential for flycatchers to help control mosquitoes and the potential for critical habitat designation surrounding around Isabella Lake could result in increased air pollution in the form of dust from bare soils and associated respiratory problems
- Potential for designation to adversely affect recreation through constraining access, OHV use, hiking, biking, and fishing

- Potential to preserve recreation opportunities by maintaining riparian habitat and open space
- Adverse impacts to flycatchers from bird watching and other recreational activities

#### **1.4.7 WATER**

- Critical habitat designation can enhance water conservation by maintaining riparian habitat
- Maintaining riparian habitat can help to regulate flood flows
- Designation may negatively impact available water resources by constraining supply projects, water diversions, water delivery, water rights, irrigation rights, storage, lake and reservoir levels, floodway maintenance, and water-based recreational activities
- Loss of ability and flexibility to manage water resources in the future

#### **1.4.8 WILDLIFE & FISHERIES**

- Necessity for critical habitat designation to consider entire ecosystems
- Critical habitat designations and recovery programs for other endangered and threatened species should be considered to ensure compatibility

### ***1.5 DECISIONS TO BE MADE***

Critical habitat is designated in a federal rule-making process that includes publication of notices for the draft and final rule in the Federal Register. The draft rule notice solicits public comment. The final rule notice includes responses to comments received.

## **2.0 CHAPTER TWO – ALTERNATIVES**

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This section describes the proposal for critical habitat for the flycatcher. Alternatives are different ways of meeting the purpose and need for critical habitat designation as described in Chapter One, which can be summarized as to provide protection of habitat that is essential to the conservation of listed species.

### *2.1 DEVELOPMENT OF ALTERNATIVES*

Development of critical habitat alternatives was based on the Criteria for Defining Essential Habitat presented in Chapter One. Also, alternative development was based on potential stream segments identified in the Recovery Plan, in previous critical habitat designation, input and analysis by USFWS staff from Regional and Field Offices across the subspecies range, and scoping input from agencies and the public. Specific sources from scoping that were utilized in this process included:

- Scoping comments from Arizona Game and Fish Department (AGFD) - 2004
- Scoping comments from State of Utah echoed by USFWS SLC FO –2002/2004
- Scoping comments from the U.S. Forest Service (USFS) – San Bernardino NF - 2004
- Comments from USFWS Ventura, CA, FO – 2004
- Comments from USFWS Sacramento, CA, FO - 2004
- Comments from USFWS New Mexico FO - 2004
- Scoping comments from New Mexico Game and Fish Department - 2004
- Scoping comments from Nevada Department of Wildlife - 2004
- AGFD Southwestern willow flycatcher satellite model (Hatten and Paradzick 2003)
- Recovery Plan distribution of territories – (USFWS 2002)
- Expert opinion on habitat - 2004
- USGS Southwestern willow flycatcher 2002 nesting site and territory summary (Sogge et al. 2003a)
- Comments from CA Dept of Parks and Recreation – 2002
- Comments from USFWS Grand Junction, CO, FO – 2004
- Recovery Plan Table 10 (USFWS 2002)

### *2.2 ALTERNATIVES*

No Action and two action alternatives were identified. These alternatives are described below.

#### **2.2.1 NO ACTION ALTERNATIVE**

The No Action Alternative would be no designation of critical habitat for the flycatcher. An analysis of a No Action Alternative is required by NEPA, and provides a baseline for analyzing

effects of action alternatives. However, if no critical habitat were designated for this subspecies, the USFWS would not be meeting the requirements of the ESA and operating counter to the order of the U.S. District Court for New Mexico.

## **2.2.2 ALTERNATIVE A, ESSENTIAL HABITAT**

Alternative A would designate stream segments in 21 Management Units in 5 Recovery Units as critical habitat for the flycatcher (see Figure 1 for boundaries of Recovery and Management Units and a comprehensive view of the proposed designated stream segments). These stream segments occur in southern California, southern Nevada, southwestern Utah, Arizona, New Mexico and south-central Colorado. These critical habitat stream segments were identified in the process described in Criteria for Defining Essential Habitat above and as such they are considered to constitute the areas essential for the conservation of the flycatcher. The stream segments are listed below by Recovery and Management units. Locations of the stream segments are depicted in Figure 2 (West), Figure 3 (Central), and Figure 4 (East).

### **Coastal California Recovery Unit**

1. **Santa Ynez Management Unit** – Santa Ynez River
2. **Santa Ana Management Unit** – Bear Creek, Mill Creek, Oak Glen Creek/Yucaipa Creek/Wilson Creek/San Timoteo Wash, Santa Ana River, and Waterman Canyon
3. **San Diego Management Unit** – Las Flores Creek/Las Pulgas Creek, San Mateo Creek, Cristianitos Creek, and San Onofre Creek; Santa Margarita River and DeLuz Creek; San Luis Rey River and Pilgrim Creek; Agua Hedionda Creek and Agua Hedionda Lagoon; San Dieguito River, Lake Hodges, Santa Ysabel River and Temescal Creek; Temecula Creek; Cuyamaca Reservoir; and San Diego River

### **Basin and Mohave Recovery Unit in California**

4. **Owens Management Unit** – Owens River
5. **Kern Management Unit** – South Fork Kern River (including upper Isabella Lake)
6. **Mohave Management Unit** – Deep Creek, Holcomb Creek, Mohave River
7. **Salton Management Unit** – San Felipe Creek.

### **Lower Colorado Recovery Unit – Nevada, California/Arizona border, Arizona, Utah**

8. **Little Colorado Management Unit** – Little Colorado River, West/East/and South Forks of the Little Colorado River, AZ
9. **Virgin Management Unit** – Virgin River, NV/AZ/UT
10. **Middle Colorado Management Unit** – Colorado River, AZ
11. **Pahranagat Management Unit** – Pahranagat River, Muddy River, NV
12. **Bill Williams Management Unit** – Big Sandy River, Bill Williams River, and Santa Maria River (including upper Alamo Lake), AZ
13. **Hoover to Parker Management Unit** – Colorado River, CA/AZ
14. **Parker to Southerly International Border Management Unit** – Colorado River, CA/AZ

### **Gila Recovery Unit in Arizona and New Mexico**

15. **Verde Management Unit** – Verde River (including Horseshoe Lake), AZ
16. **Roosevelt Management Unit** – Salt River and Tonto Creek (including Theodore Roosevelt Lake), and Pinto Creek, AZ
17. **Middle Gila/San Pedro Management Unit** – Gila River and San Pedro River, AZ
18. **Upper Gila Management Unit** – Gila River in AZ/NM

### **Rio Grande Recovery Unit in New Mexico and Colorado**

19. **San Luis Valley Management Unit** – Conejos River, Rio Grande, CO
20. **Upper Rio Grande Management Unit** – Coyote Creek, Rio Grande, Upper Rio Grande del Rancho, NM
21. **Middle Rio Grande Management Unit** – Rio Grande, NM

The approximate area and length of all stream segments exhibiting flycatcher critical habitat combined by Management Unit are shown in Table 2.1. Table 2.2 shows the acreages and land ownership percentages of the area proposed for critical habitat designation under Alternative A.

**Table 2.1.** Alternative A: Southwestern Willow Flycatcher Essential Habitat Areas and Stream Segment Lengths, by Management Unit

<b>Management Unit</b>	<b>Acres (hectares)</b>	<b>Miles (kilometers)</b>	<b>State(s)</b>
<b>Coastal California Recovery Unit</b>			
1. San Diego	15,890 (6431)	203 (327)	CA
2. Santa Ana	10,608 (4293)	106 (170)	CA
3. Santa Ynez	3,855 (1560)	24 (39)	CA
<b>Subtotal</b>	<b>30,353 (12284)</b>	<b>333 (536)</b>	
<b>Basin and Mohave Recovery Unit, CA</b>			
4. Kern	5,309 (2148)	12 (20)	CA
5. Mojave	2,553 (1033)	35 (56)	CA
6. Owens	9,366 (3790)	69 (110)	CA
7. Salton	206 (83)	7 (11)	CA
<b>Subtotal</b>	<b>17,434 (7054)</b>	<b>123 (197)</b>	
<b>Lower Colorado Recovery Unit, NV, CA, AZ, UT</b>			
8. Bill Williams	20,596 (8335)	64 (103)	AZ
9. Hoover-Parker	41,662 (16860)	69 (110)	AZ, CA
10. Little Colorado	609 (247)	26 (43)	AZ
11. Middle Colorado	6,762 (2736)	37 (59)	AZ
12. Pahrnagat	3,897 (1577)	17 (27)	NV
13. Parker-Southerly International Border	25,437 (10294)	66 (106)	AZ, CA

**Table 2.1.** Alternative A: Southwestern Willow Flycatcher Essential Habitat Areas and Stream Segment Lengths, by Management Unit

Management Unit	Acres (hectares)	Miles (kilometers)	State(s)
14. Virgin	13,714 (5550)	92 (148)	AZ, NV, UT
<b>Subtotal</b>	<b>112,677 (45599)</b>	<b>371 (596)</b>	
Gila Recovery Unit, AZ and NM			
15. Middle Gila/San Pedro	24,313 (9839)	118 (190)	AZ
16. Roosevelt	29,520 (11946)	87 (140)	AZ
17. Upper Gila	27,372 (11077)	143 (230)	AZ, NM
18. Verde	10,207 (4131)	79 (127)	AZ
<b>Subtotal</b>	<b>91,412 (36993)</b>	<b>427 (687)</b>	
Rio Grande Recovery Unit, NM and CO			
19. Middle Rio Grande	49,593 (20069)	129 (207)	NM
20. San Luis Valley	68,437 (27695)	115 (186)	CO
21. Upper Rio Grande	6,318 (2557)	59 (95)	NM
<b>Subtotal</b>	<b>124,348 (50321)</b>	<b>303 (488)</b>	
<b>GRAND TOTAL</b>	<b>376,225 (152251)</b>	<b>1,557 (2504)</b>	

**Table 2.2.** Alternative A Acres and Ownership of Proposed Critical Habitat

Ownership	Total Acres <sup>1</sup>	% of Total
BLM	26,895	7.15
USFS	38,220	10.16
Tribal	27,014	7.18
BOR	4,911	1.31
USFWS	48,656	12.93
NPS	5,939	1.58
State	16,173	4.30
Local	10,376	2.76
Private	183,494	48.77
Military	8,864	2.35
Unknown	1,684	0.45
Water	3,999	1.06
<b>Total</b>	<b>376,225</b>	<b>100</b>

Source: USFWS 2004b

<sup>1</sup> Due to differences in rounding precision, the total number of acres in the USFWS Proposed Rule for critical habitat is slightly less than the total acreages presented in this table.



Considered in the context of the subspecies' wide geographic distribution, the disjunct nature of the populations, the dynamic aspects of its habitat, its endangered status, and its recovery goals, each stream segment is considered essential for the conservation of the flycatcher (USFWS 2002). Stream segments are distributed throughout a large portion of the subspecies' range in order to help avoid catastrophic losses and to provide meta-population stability, gene flow, and connectivity. Each stream segment is essential because it contains one or more of the PCEs, and as a result, provides flycatcher habitat for nesting, feeding, sheltering, and migration that subsequently provide meta-population stability, gene flow of the subspecies, and connectivity between neighboring Management Units and Recovery Units (USFWS 2002). Each stream segment contributes habitat in order to help provide for the numerical and habitat-related goals needed to remove the threat of extinction (USFWS 2002). With the exception of five stream segments (Cristianitos Creek, San Ysabel River, Temescal Creek, Holcomb Creek, and Pinto Creek), each segment was identified in Table 10 of the Recovery Plan (USFWS 2002) as an area where recovery efforts should be focused. However, the Plan also noted that there are important areas for flycatchers not described in Table 10. The distribution and abundance of territories and habitat within each stream segment are expected to shift over time as a result of natural disturbance events such as flooding that re-shape floodplains, river channels, and riparian habitat (USFWS 2002).

### **2.2.3 ALTERNATIVE B, ESSENTIAL HABITAT LESS EXCLUSIONS**

Section 4(b)(2) of the ESA states that an area may be excluded from critical habitat if it is determined that benefits of such exclusion outweigh benefits of specifying an area as critical habitat, unless excluding an area will result in extinction. Criteria by which such exclusion may be made include factors such as economic impacts, impacts on national security, or the preservation of conservation partnerships

Areas considered for exclusion may include those covered by 1) legally operative Habitat Conservation Plans (HCPs); 2) Draft HCPs (that have undergone public review and comments), 3) Tribal conservation plans; 4) State conservation plans, or 5) National Wildlife Refuge System Comprehensive Plans; providing such plans cover the species and provide assurances that the conservation measures outlined for the species will be implemented and effective (69 FR 60709).

Benefits of excluding HCPs include relieving landowners, communities and counties of additional regulatory burdens that might be imposed by critical habitat. Imposing additional regulatory review may jeopardize conservation efforts and partnerships, and could be viewed as a disincentive to those developing HCPs or NCCP/HCPs. Similarly, excluding HCPs and NCCP/HCP from critical habitat may encourage the continued development of such partnerships (69 FR 60709).

Effectiveness of an HCP's protection of essential habitat is addressed in a section consultation. HCPs typically provide greater conservation benefits than what occurs in consultations for individual projects. HCPs include stipulations for long term protection and management of the species, and the funding for such under the 5 Point Policy for HCPs (64 FR35242) and HCP No Surprises (63 FR 8859) regulations (69 FR 60709).

Alternative B consists of the areas identified as essential habitat (Alternative A) less stream segments identified as suitable for exclusion from critical habitat designation. Those segments are:

## **Coastal California Recovery Unit**

1. Santa Ana Management Unit – portions of the Santa Ana River, Temecula Creek, and Yucaipa Creek. These areas have been excluded because an HCP is in place that covers the species and provide assurances that the conservation measures outlined for the species will be implemented and effective. The Western Riverside County Multiple Species Habitat Conservation Plan (MSHCP) was approved in 2004 and aims to conserve 100% of occupied habitat for the species. The MSHCP also requires compliance with certain policies containing provisions requiring 100% avoidance and long-term management/protection of occupied areas not included in the conservation area (unless a biological equivalent or superior preservation determination can demonstrate that a proposed alternative will provide equal or greater conservation benefits) (69 FR 60709).
2. San Diego Management Unit – areas along the San Dieguito (including Lake Hodges), Sweetwater, and San Diego Rivers (including Cuyamaca Reservoir); portions of Cristianitos, San Onofre, Temecula, Agua Hedionda, Pilgrim, and DeLuz Creeks; portions of the Santa Margarita and Santa Ysabel Rivers; all of San Mateo, Las Flores, and Las Pulgas Creeks; and Agua Hedionda Lagoon. These areas have been excluded for several reasons:
  - Two management plans covering these areas, the San Diego Multiple Species Conservation Program (MSCP), and the City of Carlsbad Habitat Management Plan (HMP), are being developed and will cover the species and provide assurances that the conservation measures outlined for the species will be implemented and effective (69 FR 60709).
  - Portions of these areas are on the Marine Corps Base, Camp Pendleton. A section 7 consultation was completed in 1995, which determined that ongoing training/maintenance activities would not jeopardize the continued existence of the southwestern willow flycatcher. Furthermore, impacts to national security (such as a delay or impairment in the ability of the Marine Corps to train personnel) could be caused by the requirement of additional consultations (69 FR 60709).
  - The Naval Weapons Station, Fallbrook (a major ordnance storage facility) is working cooperatively with the FWS to develop an Integrated Natural Resources Management Plan (INRMP) to address conservation needs. A primary component of the INRMP, the Fire Management Plan, has already been completed, in which it was determined that a) no flycatchers have been detected since the listing of the species, and b) measures outlined to offset, avoid or minimize effect to another riparian dependent species, the least Bell's vireo, are adequate to avoid effect on transient southwestern willow flycatchers. Designation of critical habitat would require the reinitiating of consultation and may lead to delays in the completion of the INRMP, which is believed to provide equal or greater benefit to southwestern willow flycatchers than a critical habitat designation. Furthermore, potential impacts to national security could be caused by the inclusion. (69 FR 60709).

### **Gila Recovery Unit, Arizona and New Mexico**

3. Roosevelt Management Unit – Theodore Roosevelt Lake (proposed for exclusion). This area has been proposed for exclusion for several reasons:
  - An HCP is in place for Roosevelt Dam operations for 50 years and provides for habitat protection through a variety of measures as well as conservation of off-site habitat (69 FR 60709).
  - Flycatcher mitigation measures presently occurring at Theodore Roosevelt Lake include the placement of a Forest Protection Officer on-site and the development of flycatcher nesting habitat at Rock House Farms.
4. Middle Gila/San Pedro Management Unit – several small mitigation parcels on the San Pedro River associated with the Roosevelt Lake HCP The HCP for Roosevelt Dam includes these areas as off-site habitat acquired for mitigation (69 FR 60709).
5. Verde Management Unit – a small mitigation parcel on the upper Verde River segment associated with the Roosevelt Lake HCP The HCP for Roosevelt Dam includes these areas as off-site habitat acquired for mitigation (69 FR 60709).

Following is a list of National Wildlife Refuges, tribal lands, and state wildlife management areas that have been identified in the Proposed Rule (69 FR 60709) as potential exclusions. These areas are not proposed for exclusions at the current time, but may be excluded after further analysis and public comment. These areas are not excluded from Alternative B:

- Alamosa, Bill Williams, Bosque del Apache, Cibola, Havasu, Imperial, Pahrnagat, and Sevilleta National Wildlife Refuges All of the above refuges either have developed (Alamosa, Sevilleta) or are developing (the remainder) comprehensive management plans that provide for the protection and management of federally listed species. All plans will undergo section 7 consultation (69 FR 60709).
- Chemehuevi, Colorado River, Fort Mojave, Fort Yuma, Hualapai, Isleta, La Jolla, Pala, Rincon, San Carlos, San Ildefonso, San Juan, Santa Clara, Santa Ysabel, and Yavapai Apache Reservations. FWS policy is to manage natural resources on tribal lands through tribal authority, policies, and programs whenever possible, rather than through Federal regulation. While these areas are not proposed for exclusions at the current time, they may be excluded after further evaluation of tribal management plans (69 FR 60709).
- Key Pittman and Overton State Wildlife Management Areas, Nevada. Both have management plans in place or in process that will protect and improve flycatcher-related riparian habitat. The Key Pittman Wildlife draft management plan, while not yet finalized, has undergone public review and comment (69 FR 60709).

Alternative B, the formal proposal for critical habitat for the flycatcher, represents Alternative A minus 4(b)(2) exclusions. Alternative B contains 30,445 fewer acres (12,321 ha) of habitat and 140 fewer miles (225 km) of stream segments than Alternative A, an 8 and 9 percent reduction, respectively (Table 2.3).

**Table 2.3.** Southwestern Willow Flycatcher Critical Habitat Areas and Stream Segment Lengths That Are Excluded from Alternative B, by Management Unit.

Management Unit	Acres (hectares)	Miles (kilometers)	State(s)
Coastal California Recovery Unit			
1. Santa Ana	1,285 (520)	10 (15)	CA
2. San Diego	9,634 (3899)	106 (171)	CA
<b>Subtotal</b>	<b>10,919 (4419)</b>	<b>116 (186)</b>	
Gila Recovery Unit, AZ and NM			
3. Roosevelt	19,171 (7758)	24 (39)	AZ
4. Middle Gila/San Pedro	232 (94)	0 (0)	AZ
5. Verde	124 (50)	0 (0)	AZ
<b>Subtotal</b>	<b>19,527 (7902)</b>	<b>24 (39)</b>	
<b>GRAND TOTAL</b>	<b>30,445 (12321)</b>	<b>140 (225)</b>	

The Alternative B stream segments, by Recovery and Management Unit, are as follows (see also Table 2.4):

#### **Coastal California Recovery Unit**

1. Santa Ynez Management Unit – Santa Ynez River
2. Santa Ana Management Unit – Bear Creek, Mill Creek, Oak Glen Creek/Wilson Creek/ Yucaipa Creek /San Timoteo Wash, Santa Ana River, and Waterman Canyon
3. San Diego Management Unit –Cristianitos Creek, San Onofre Creek, DeLuz Creek, Santa Margarita River, Temecula Creek, Pilgrim Creek, and Agua Hedionda Creek; and San Luis Rey River Santa Ysabel River, and Temescal Creek.

#### **Basin and Mohave Recovery Unit in California**

4. Owens Management Unit – Owens River
5. Kern Management Unit – South Fork Kern River (including upper Isabella Lake)
6. Mohave Management Unit – Deep Creek, Holcomb Creek, Mohave River
7. Salton Management Unit – San Felipe Creek

#### **Lower Colorado Recovery Unit – Nevada, California/Arizona border, Arizona, Utah**

8. Little Colorado Management Unit – Little Colorado River, West/East/and South Forks of the Little Colorado River, AZ
9. Virgin Management Unit – Virgin River, NV/AZ/UT
10. Middle Colorado Management Unit – Colorado River, AZ
11. Pahrnagat Management Unit – Pahrnagat River, Muddy River, NV
12. Bill Williams Management Unit – Big Sandy River, Bill Williams River, and Santa Maria River (including upper Alamo Lake), AZ
13. Hoover to Parker Management Unit – Colorado River, CA/AZ
14. Parker to Southerly International Border Management Unit – Colorado River, CA/AZ

### Gila Recovery Unit in Arizona and New Mexico

15. Verde Management Unit – Verde River (including Horseshoe Lake; less a small parcel at Camp Verde), AZ
16. Roosevelt Management Unit – Salt River, Tonto Creek, and Pinto Creek, AZ
17. Middle Gila/San Pedro Management Unit – Gila River and San Pedro River (less a few small parcels along the San Pedro River), AZ
18. Upper Gila Management Unit – Gila River in AZ/NM

### Rio Grande Recovery Unit in New Mexico and Colorado

19. San Luis Valley Management Unit – Conejos River, Rio Grande, CO
20. Upper Rio Grande Management Unit – Coyote Creek, Rio Grande, Upper Rio Grande del Rancho, NM
21. Middle Rio Grande Management Unit – Rio Grande, NM

**Table 2.4.** Alternative B: Southwestern Willow Flycatcher Critical Habitat Areas and Stream Segment Lengths by Management Unit

Management Unit	Acres (hectares)	Miles (kilometers)	State(s)
Coastal California Recovery Unit			
1. San Diego	6,256 (2532)	97 (156)	CA
2. Santa Ana	9,323 (3773)	96 (155)	CA
3. Santa Ynez	3,855 (1560)	24 (39)	CA
<b>Subtotal</b>	<b>19,434 (7865)</b>	<b>217 (350)</b>	
Basin and Mohave Recovery Unit, CA			
4. Kern	5,309 (2148)	12 (20)	CA
5. Mojave	2,553 (1033)	35 (56)	CA
6. Owens	9,366 (3790)	69 (110)	CA
7. Salton	206 (83)	7 (11)	CA
<b>Subtotal</b>	<b>17,434 (7054)</b>	<b>123 (197)</b>	
Lower Colorado Recovery Unit, NV, CA, AZ, UT			
8. Bill Williams	20,596 (8335)	64 (103)	AZ
9. Hoover-Parker	41,662 (16860)	69 (110)	AZ, CA
10. Little Colorado	609 (247)	26 (43)	AZ
11. Middle Colorado	6,762 (2736)	37 (59)	AZ
12. Pahrnagat	3,897 (1577)	17 (27)	NV
13. Parker-Southerly International Border	25,437 (10294)	66 (106)	AZ, CA
14. Virgin	13,714 (5550)	92 (148)	AZ, NV, UT
<b>Subtotal</b>	<b>112,677 (45599)</b>	<b>371 (596)</b>	

**Table 2.4.** Alternative B: Southwestern Willow Flycatcher Critical Habitat Areas and Stream Segment Lengths by Management Unit

Management Unit	Acres (hectares)	Miles (kilometers)	State(s)
Gila Recovery Unit, AZ and NM			
15. Middle Gila/San Pedro	24,081 (9745)	118 (190)	AZ
16. Roosevelt	10,349 (4188)	63 (101)	AZ
17. Upper Gila	27,372 (11077)	143 (230)	AZ, NM
18. Verde	10,083 (4080)	79 (127)	AZ
<b>Subtotal</b>	<b>71,885 (29090)</b>	<b>403 (648)</b>	
Rio Grande Recovery Unit, NM and CO			
19. Middle Rio Grande	49,593 (20069)	129 (207)	NM
20. San Luis Valley	68,437 (27695)	115 (186)	CO
21. Upper Rio Grande	6,318 (2557)	59 (95)	NM
<b>Subtotal</b>	<b>124,348 (50321)</b>	<b>303 (488)</b>	
<b>GRAND TOTAL</b>	<b>345,780 (139929)</b>	<b>1,417 (2279)</b>	

Table 2.5 shows the acreages and land ownership percentages of the area proposed for critical habitat designation under Alternative B.

**Table 2.5.** Alternative B Acres and Ownership of Critical Habitat

Ownership	Total Acres <sup>1</sup>	% of Total
BLM	26,895	7.78
USFS	19,071	5.52
Tribal	27,014	7.81
BOR	4,911	1.42
USFWS	48,656	14.07
NPS	5,939	1.72
State	16,171	4.68
Local	9,347	2.70
Private	177,254	51.26
Military	4,852	1.40
Unknown	1,671	0.48
Water	3,999	1.16
<b>Total</b>	<b>345,780</b>	<b>100</b>

<sup>1</sup>Due to differences in rounding precision, the total number of acres in the USFWS Proposed Rule for critical habitat is slightly less than the total acreages presented in this table.

### 2.3 COMPARISON OF ALTERNATIVES

The following Table 2.6 summarizes the potential effects of the alternative critical habitat designations. Potential effects on resources are summarized from the analyses presented in Chapter 3.

**Table 2.6.** Comparison of Potential Effects of Southwestern Willow Flycatcher Critical Habitat Designation Alternatives

Resource	No Action	Alternative A	Alternative B
Soils and Mineral Resources	Impacts to soils would not change from existing trends and conditions.	Increased number of re-initiated and additional section 7 consultations for ongoing and proposed projects in designated critical habitat.  Indirect beneficial effects to soils from conservation of PCEs.	Compared to Alternative A, a decreased number of re-initiated and additional section 7 consultations. <sup>1</sup>  Similar effects as Alternative A.
Water Resources	Impacts to water resources would not change from existing trends and conditions.	Beneficial effects on water resources from PCE conservation and off-site mitigation. Impacts to ongoing water management projects similar to No Action, with minor impacts to proposed water management projects.  Increased number of re-initiated and a small number of additional section 7 consultations for ongoing and proposed projects in designated critical habitat.	Effects similar to Alternative A.  Decreased number of re-initiated and additional section 7 consultations, compared to Alternative A. Effects to water resources similar to Alternative A.
Vegetation	Impacts to riparian vegetation resources would not change from existing trends and conditions.	Beneficial effects on vegetation from conservation of PCEs. Impacts to riparian restoration projects would be similar to existing conditions.  Increased number of re-initiated section 7 consultations for ongoing projects and additional section 7 consultations for proposed projects.	Effects similar to Alternative A.  Decreased number of re-initiated section 7 consultations for ongoing projects and decreased number of additional section 7 consultations, compared to Alternative A.

<sup>1</sup> The section 7 consultations would be less under Alternative B because of the areas excluded from critical habitat designation under this alternative. The effects would be similar to Alternative A because the excluded areas would still be managed to conserve flycatcher habitat. So, though Alternative B would designate fewer acres as flycatcher critical habitat, the effects on flycatcher conservation would be similar under both action alternatives.

<sup>2</sup> Public Law No. 108-136 (Nov. 2003): The National Defense Authorization Act amended section 4(b)(2) of the ESA to include consideration of the impact of critical habitat designation on national security. It also amended section 4(a)(3) of the ESA to exempt DoD lands from critical habitat if an adequate Integrated Natural Resource Management Plan (INRMP) is in place.

**Table 2.6.** Comparison of Potential Effects of Southwestern Willow Flycatcher Critical Habitat Designation Alternatives

Resource	No Action	Alternative A	Alternative B
Exotic Plants	Impacts to exotic species control would not change from existing trends and conditions.	Increased number of re-initiated section 7 consultations for ongoing exotic plant control projects and increased number of additional section 7 consultations for proposed projects.  Impacts to PCEs similar to current conditions: short-term adverse impacts on PCEs from vegetation and habitat disturbance, with long-term beneficial effects on vegetation and habitat from native plant restoration. Minor impacts to projects could occur by requiring implementation outside of flycatcher nesting season.	Decreased number of re-initiated section 7 consultations for ongoing projects and decreased number of additional section 7 consultations, compared to Alternative A.  Similar effects as Alternative A.
Wildlife	Impacts to wildlife resources would not change from existing trends and conditions.	Beneficial effects to flycatcher and other wildlife from conservation of critical habitat PCEs, including riparian bird species, mammals, reptiles, and amphibians.  Increased number of reinitiated section 7 consultations and additional section 7 consultations for ongoing and proposed projects within designated critical habitat.	Decreased number of reinitiated section 7 consultations for ongoing projects and decreased number of additional section 7 consultations for proposed projects, compared to Alternative A.  Similar effects as Alternative A.
Fisheries	Impacts to fisheries resources would not change from existing trends and conditions.	Beneficial effects to fisheries from conservation of critical habitat PCEs by maintaining streamflows, increasing insect prey, water temperature moderation, reduced erosion.	Decreased number of reinitiated section 7 consultations for ongoing projects and decreased number of additional section 7 consultations for proposed projects, compared to Alternative A.

<sup>1</sup> The section 7 consultations would be less under Alternative B because of the areas excluded from critical habitat designation under this alternative. The effects would be similar to Alternative A because the excluded areas would still be managed to conserve flycatcher habitat. So, though Alternative B would designate fewer acres as flycatcher critical habitat, the effects on flycatcher conservation would be similar under both action alternatives.

<sup>2</sup> Public Law No. 108-136 (Nov. 2003): The National Defense Authorization Act amended section 4(b)(2) of the ESA to include consideration of the impact of critical habitat designation on national security. It also amended section 4(a)(3) of the ESA to exempt DoD lands from critical habitat if an adequate Integrated Natural Resource Management Plan (INRMP) is in place.



**Table 2.6.** Comparison of Potential Effects of Southwestern Willow Flycatcher Critical Habitat Designation Alternatives

Resource	No Action	Alternative A	Alternative B
Fisheries, (continued)		Increased number of reinitiated section 7 consultations and additional section 7 consultations for ongoing and proposed projects within designated critical habitat.	Similar effects as Alternative A.
Threatened and Endangered Species	Impacts to listed species would not change from existing trends and conditions.	<p>Increased number of reinitiated section 7 consultations and additional section 7 consultations for ongoing and proposed projects within designated critical habitat.</p> <p>Beneficial effects to listed species from increased consultations that result in enhanced riparian ecosystem integrity.</p> <p>Negligible to minor effects on razorback sucker, bonytail chub, and Colorado pikeminnow.</p>	<p>Decreased number of reinitiated section 7 consultations for ongoing projects and decreased number of additional section 7 consultations for proposed projects, compared to Alternative A.</p> <p>Similar effects as Alternative A.</p>
Fire Management	Impacts to fire management activities would not change from existing trends and conditions.	<p>Increased number of re-initiated and additional section 7 consultations for ongoing and proposed fire management projects in Wildland-Urban Interface (WUI) areas and other areas identified as benefiting from fire management within designated critical habitat.</p> <p>Short-term adverse impacts to PCEs from vegetation and habitat disturbances, with long-term beneficial effects on flycatcher habitat by reducing wildland fire risks.</p> <p>Minor to negligible impacts on fire management activities.</p>	<p>Decreased number of re-initiated section 7 consultations for ongoing projects and decreased number of additional section 7 consultations, compared to Alternative A.</p> <p>Similar effects as Alternative A.</p>

<sup>1</sup> The section 7 consultations would be less under Alternative B because of the areas excluded from critical habitat designation under this alternative. The effects would be similar to Alternative A because the excluded areas would still be managed to conserve flycatcher habitat. So, though Alternative B would designate fewer acres as flycatcher critical habitat, the effects on flycatcher conservation would be similar under both action alternatives.

<sup>2</sup> Public Law No. 108-136 (Nov. 2003): The National Defense Authorization Act amended section 4(b)(2) of the ESA to include consideration of the impact of critical habitat designation on national security. It also amended section 4(a)(3) of the ESA to exempt DoD lands from critical habitat if an adequate Integrated Natural Resource Management Plan (INRMP) is in place.

**Table 2.6.** Comparison of Potential Effects of Southwestern Willow Flycatcher Critical Habitat Designation Alternatives

Resource	No Action	Alternative A	Alternative B
Livestock Grazing	Impacts to livestock grazing would not change from existing trends and conditions.	<p>An increase in number of re-initiated section 7 consultations for livestock grazing activities within designated critical habitat; small, unknown increase in additional section 7 consultations for proposed livestock grazing projects in designated critical habitat.</p> <p>Beneficial effects on flycatcher PCEs from grazing-related flycatcher conservation measures.</p> <p>Small to negligible impacts to grazing, in terms of modifications to or restrictions on grazing.</p>	<p>Decreased number of re-initiated section 7 consultations for ongoing projects and decreased number of additional section 7 consultations, compared to Alternative A.</p> <p>Similar effects and impacts as Alternative A.</p>
Land Management	Impacts to land management would not change from existing trends and conditions.	<p>Increased number of re-initiated and additional section 7 consultations for ongoing and proposed projects in designated critical habitat.</p> <p>Unknown effects on land management, because of scope of federal land management within designated critical habitat, which could include resource management plan revisions, cowbird control, project monitoring and mitigation, grazing and recreation monitoring.</p> <p>Likely beneficial effects on flycatcher PCEs from proposed project modifications and/or mitigation to conserve flycatcher habitat.</p>	<p>Decreased number of re-initiated section 7 consultations for ongoing projects and decreased number of additional section 7 consultations, compared to Alternative A.</p> <p>Effects similar to Alternative A.</p>

<sup>1</sup> The section 7 consultations would be less under Alternative B because of the areas excluded from critical habitat designation under this alternative. The effects would be similar to Alternative A because the excluded areas would still be managed to conserve flycatcher habitat. So, though Alternative B would designate fewer acres as flycatcher critical habitat, the effects on flycatcher conservation would be similar under both action alternatives.

<sup>2</sup> Public Law No. 108-136 (Nov. 2003): The National Defense Authorization Act amended section 4(b)(2) of the ESA to include consideration of the impact of critical habitat designation on national security. It also amended section 4(a)(3) of the ESA to exempt DoD lands from critical habitat if an adequate Integrated Natural Resource Management Plan (INRMP) is in place.

**Table 2.6.** Comparison of Potential Effects of Southwestern Willow Flycatcher Critical Habitat Designation Alternatives

Resource	No Action	Alternative A	Alternative B
Land Use	Impacts to land management would not change from existing trends and conditions.	Increased number of re-initiated section 7 consultations for on-going projects within designated critical habitat, increased number of additional section 7 consultations for proposed projects in designated critical habitat.  Minor, indirect impacts on land use from limitations or restrictions to conserve PCEs.	Decreased number of re-initiated section 7 consultations for ongoing projects and decreased number of additional section 7 consultations, compared to Alternative A.  Same Alternative A.
Economics	Impacts to current conditions of economic efficiency and distribution would not change.	Increased number of re-initiated section 7 consultations for on-going projects within designated critical habitat, increased number of additional section 7 consultations for proposed projects in designated critical habitat.  Indirect, adverse impacts to agencies and project proponents from time and monetary costs to conduct section 7 consultations and develop project alternatives and mitigation within designated critical habitat.	Impacts similar to Alternative A, but to a lesser degree, from a decreased likelihood of re-initiated section 7 consultations for ongoing projects and decreased likelihood of initiating additional section 7 consultations.  Similar impacts as Alternative A, but less because exclusion areas would reduce the number of section 7-related administrative and monetary costs.
Recreation	Impacts to recreation resources would not change from existing conditions and trends.	Increased number of re-initiated section 7 consultations for ongoing projects within designated critical habitat, increased number of additional section 7 consultations for proposed projects in designated critical habitat.	Decreased number of re-initiated section 7 consultations for ongoing projects and decreased number of additional section 7 consultations, compared to Alternative A.

<sup>1</sup> The section 7 consultations would be less under Alternative B because of the areas excluded from critical habitat designation under this alternative. The effects would be similar to Alternative A because the excluded areas would still be managed to conserve flycatcher habitat. So, though Alternative B would designate fewer acres as flycatcher critical habitat, the effects on flycatcher conservation would be similar under both action alternatives.

<sup>2</sup> Public Law No. 108-136 (Nov. 2003): The National Defense Authorization Act amended section 4(b)(2) of the ESA to include consideration of the impact of critical habitat designation on national security. It also amended section 4(a)(3) of the ESA to exempt DoD lands from critical habitat if an adequate Integrated Natural Resource Management Plan (INRMP) is in place.

**Table 2.6.** Comparison of Potential Effects of Southwestern Willow Flycatcher Critical Habitat Designation Alternatives

Resource	No Action	Alternative A	Alternative B
Recreation (continued)		Adverse impacts on some recreational opportunities from limitations to conserve PCEs, with beneficial effects on other recreational opportunities that have low impacts on flycatcher PCEs.	Similar to Alternative A effects.
Health and Safety	Impacts to existing health and safety conditions and management would not change from existing conditions and trends.	Increased number of re-initiated section 7 consultations and increased number of additional section 7 consultations for ongoing and proposed insect control and other health and safety activities and projects in designated critical habitat. Beneficial effects to PCEs from limitations or restrictions on insect control within designated critical habitat. Unknown impacts to human health and safety by insect-borne diseases from critical habitat designation because man-made conditions overwhelm natural causes.	Decreased number of re-initiated section 7 consultations for ongoing insect control and other health-related projects and activities, and decreased number of additional section 7 consultations for these project and activities, when compared to Alternative A. Same as Alternative A.
National Security	No impacts to national security. <sup>2</sup>	Same as No Action.	Same as No Action.
Tribal Trust Resources	Impacts to existing conditions of Tribal Trust resources would not change from current conditions and trends.	Approximately 27,014 acres of critical habitat stream segments on tribal trust lands that would have an increased number of additional section 7 consultations and an increased number of re-initiated section 7 consultations, compared to the No Action Alternative. Potential indirect, adverse impacts from the perception of increased federal control in tribal land management.	Compared to Alternative A, a reduced number of additional section 7 consultations and re-initiated section 7 consultations for ongoing and proposed projects on tribal trust lands.  Similar impacts as Alternative A, but reduced in scope and potential.

<sup>1</sup> The section 7 consultations would be less under Alternative B because of the areas excluded from critical habitat designation under this alternative. The effects would be similar to Alternative A because the excluded areas would still be managed to conserve flycatcher habitat. So, though Alternative B would designate fewer acres as flycatcher critical habitat, the effects on flycatcher conservation would be similar under both action alternatives.

<sup>2</sup> Public Law No. 108-136 (Nov. 2003): The National Defense Authorization Act amended section 4(b)(2) of the ESA to include consideration of the impact of critical habitat designation on national security. It also amended section 4(a)(3) of the ESA to exempt DoD lands from critical habitat if an adequate Integrated Natural Resource Management Plan (INRMP) is in place.

**Table 2.6.** Comparison of Potential Effects of Southwestern Willow Flycatcher Critical Habitat Designation Alternatives

Resource	No Action	Alternative A	Alternative B
Environmental Justice	Impacts to low income and minority populations would not change from current conditions and trends.	Unknown impacts to low-income or minority populations from critical habitat designation due to lack of site specific demographics and section 7 consultation outcomes on projects and activities within designated critical habitat.	Same as Alternative A.

<sup>1</sup> The section 7 consultations would be less under Alternative B because of the areas excluded from critical habitat designation under this alternative. The effects would be similar to Alternative A because the excluded areas would still be managed to conserve flycatcher habitat. So, though Alternative B would designate fewer acres as flycatcher critical habitat, the effects on flycatcher conservation would be similar under both action alternatives.

<sup>2</sup> Public Law No. 108-136 (Nov. 2003): The National Defense Authorization Act amended section 4(b)(2) of the ESA to include consideration of the impact of critical habitat designation on national security. It also amended section 4(a)(3) of the ESA to exempt DoD lands from critical habitat if an adequate Integrated Natural Resource Management Plan (INRMP) is in place.

## *2.4 ALTERNATIVES ELIMINATED FROM DETAILED ANALYSIS*

Additional alternatives were identified but not carried forward through detailed analyses. These alternatives and the rationale for rejecting them are described below.

### **2.4.1 AUGUST 1997 CRITICAL HABITAT DESIGNATION**

The Proposed Rule for flycatcher critical habitat includes stream segments that were not part of the August 21, 1997 designation. Numerous stream segments have since been identified that meet the criteria for proposed critical habitat. These segments include Big Sandy River, Santa Maria River, Bill Williams River, Pahrnagat River, Muddy River, Virgin River, Salt River, Tonto Creek, Pinto Creek, Rio Grande Del Rancho, Conejos River, Coyote Creek, Bear Creek, Mill Creek, Oak Glen Creek, Wilson Creek, San Timeteo Wash, Waterman Canyon, Yucaipa Creek, Temescal Creek, Pilgrim Creek, Santa Ysabel River, Cuyamaca Reservoir (Boulder Creek and Little Stonewall Creek), Cristianitos Creek, San Onofre Creek, Las Pulgas Creek, Las Flores Creek, De Luz Creek, Agua Hedionda Lagoon and Creek, San Mateo Creek, and Santa Ynez River, Owens River, Mohave River, Deep Creek, Holcomb Creek, San Felipe Creek, and Rio Grande.

Those stream segments previously designated as critical habitat in 1997 that are not now considered essential and subsequently have not been proposed for critical habitat include the following: segments on the Tularosa River, East and West Forks of the Gila River, San Francisco River, Wet Beaver Creek, West Clear Creek, and Tijuana River. No critical habitat was identified to be essential on those streams as a result of the scoping process, expert opinion, new information generated since the 1997 designation, the methodology used to determine essential habitat, and various published and unpublished information sources on flycatcher habitat and the present distribution of known territories.

The August 1997 critical habitat designation was not carried forward as an alternative because it included segments that did not meet the criteria for essential habitat and did not include segments that have been identified as meeting the criteria.

#### **2.4.2 RECOVERY PLAN RECOMMENDATIONS FOR RIVER AND STREAM SEGMENTS TO FOCUS RECOVERY EFFORTS**

The Recovery Plan recognizes the need to allow local managers flexibility in achieving recovery goals to accommodate logistical requirements, different jurisdictions, stochastic events, and variability in habitat quality and potential. To assist local managers, the Plan "highlighted some specific reaches where potential or suitable habitat exist[s]" (USFWS 2002: 79) where recovery efforts should be focused. These segments were outlined in Table 10 of the Plan. Recovery efforts include actions to offset impacts and efforts such as surveys and monitoring for flycatchers, conservation plans, establishing funding endowments, habitat protection and enhancement, acquisition of property and easements, public information and participation, and research activities (USFWS: 49-55). The Plan states that, while substantial recovery value exists in these areas, "additional reaches may also contribute toward recovery goals." (USFWS: 86).

This Table, by itself, was not carried forward as an alternative because it did not meet the criteria for critical habitat in the Proposed Rule, and was not rigorously developed to satisfy the needs of this critical habitat designation. While many river segments listed in Table 10 can be found in the Proposed Rule, the contents of the entire table did not meet the criteria for critical habitat in the Proposed Rule. The listed segments did not all have large populations and/or small populations with high connectivity. Also, as described in the Plan, additional stream segments not listed in Table 10 have been identified that meet the criteria for critical habitat in the Proposed Rule. This Table represented the Technical Team's best knowledge of quality flycatcher breeding habitat throughout the subspecies' range, there was no specific analysis done by the Technical Team that determined how much or how many of the stream segments listed were essential. Table 10 also did not consider stream segments that might be important for dispersing, migrating, and/or non-breeding flycatchers. Therefore, while Table 10 provided good information toward the development of critical habitat, Table 10 by itself was not sufficient enough to carry forward as an alternative.

## **3.0 CHAPTER THREE – AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES**

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### *3.1 INTRODUCTION*

This chapter describes resources of the natural and human environment that could be affected as a result of designation of critical habitat for the flycatcher. The potential impacts to each resource from critical habitat designation are then described. The selection of resources and issues used in the description and analysis of the affected environment are based on issues identified during the public scoping meetings and the public comment period, as well as issues identified by the USFWS.

#### **3.1.1 REGIONAL ISSUES**

The region encompassed by the alternatives extends from the Rio Grande basin of southern Colorado and New Mexico through the high country and valleys of the Gila River drainage in western New Mexico and Arizona and includes the headwaters of the Little Colorado River in the mountains of central Arizona; the Colorado River and tributaries in Arizona, Nevada, Utah and California; the Verde River basin in Arizona; the Basin and Mohave province of southern Nevada and California; and streams in coastal California. Elevations range from sea level to over 8,500 feet (2,600 meters).

This broad region supports a wide range of habitat types, land uses, and human communities and activities. Land uses and activities include agriculture and grazing, rural communities, urban lands, recreation, utilities and infrastructure, water resource developments such as reservoirs and canals, Indian reservations, and military facilities.

#### **3.1.2 RESULTS OF CRITICAL HABITAT DESIGNATION**

Designation of critical habitat does not have any inherent effects on the environment, except through the section 7 consultation process. This is because critical habitat designation does not impose broad rules or restrictions on land use, nor does it automatically prohibit any land use activity. Each federal action that could potentially affect designated critical habitat is analyzed individually during the section 7 consultation process. Individuals, organizations, local government, states, and other non-federal agencies are potentially affected by the designation of critical habitat only if their actions occur on federal lands, require a federal permit or license, or involve federal funding.

Under section 7, federal agencies are required to consult with the USFWS when their actions could affect critical habitat. For many listed species, critical habitat designation would not be expected to materially affect the number or nature of consultations. For instance, when critical habitat and the areas occupied by the species are equivalent, an action that would affect designated critical habitat would also affect the species and a consultation would be required regardless of critical habitat designation.

Because of the successional nature of riparian habitat in space and time and the flycatcher's varying use patterns of riparian habitat, a location that supports suitable nesting habitat for the subspecies today might not support suitable nesting habitat in the future. Alternatively, a location currently without suitable nesting habitat might support it at a future time. The criteria for

defining essential habitat presented in Section 1.3.3 of this document address these dynamic factors.

Some segments of critical habitat as proposed may not at a specific point in time contain any nesting flycatcher territories as a result of the dynamic nature of riparian habitat. However, non-nesting flycatchers (migrants, dispersers, and floaters) would be expected to occur in those proposed segments without territories (but are nonetheless “occupied”) because flycatchers use riparian corridors for dispersal, movement, and migration to and from nesting areas. Second-year flycatchers tend to return in the spring to or near the locale where they hatched to establish new territories due to their high degree of natal philopatry and site fidelity. In addition, 66-78% of flycatchers known to have survived from one nesting season to the next returned to the same nesting site (Luff et al. 2000). Therefore, the conservation of riparian areas adjacent to or near existing nesting sites aids in the conservation of the subspecies.

The result of critical habitat designation for southwestern willow flycatcher would be the potential for more section 7 consultations, both re-initiated and new, with their associated costs and outcomes. Additional consultations may be conducted, beyond those that would be conducted without critical habitat designation, because federal action agencies would consult on project activities in areas designated as critical habitat that previously they may not have considered to be occupied habitat and/or because of the additional information, guidance, or clarification in the critical habitat proposal. These outcomes would include expenditures of time and money by federal agencies, including the USFWS, and non-federal proponents to complete the consultations, costs to implement reasonable and prudent alternatives, and a greater likelihood that the primary consistent elements (PCEs) identified in Section 1.3.2 would be maintained as an outcome of consultations.

It is not possible to predict the specific actions and proposals that would become the subject of section 7 consultations in the areas proposed for critical habitat designation, nor is it possible to predict the outcome of those consultations. Also action agencies and proponents may incorporate conservation measures into their proposals to reduce or preclude impacts to critical habitat, thereby acting to maintain PCEs, such that the need to consult is obviated. Therefore, it is not possible to predict with any certainty or detail what the effects of designation would be. The record of past conservation measures and consultations provides some basis for predicting what kind of actions will be subject to consultation and the outcome of those consultations. However, given the variety of physical, biological, and cultural conditions in the areas proposed for designation and the range of activities now and in the future, past consultations provide limited predictive value for future effects.

Though the outcomes of section 7 consultations are not predictable, there may be increases in section 7 consultations, both re-initiated and new, within the areas proposed for critical habitat designation.

### **3.1.3 CONSULTATION OUTCOMES**

When considering federal actions that could affect critical habitat, current agency guidance (USFWS 2004d) directs USFWS biologists to complete an assessment that includes documentation of:

- Condition of the entire designated critical habitat area with emphasis on the condition of PCEs and the factors responsible for that condition.



- Conservation role of individual critical habitat units.
- Current condition of critical habitat units in the action area with emphasis on the condition of PCEs and the factors responsible for that condition.
- Relationship of the affected units in the action area to the entire designated critical habitat with respect to conservation of the listed species.
- Direct and indirect effects of the action and those of interrelated and interdependent actions on designated critical habitat including how the PCEs are likely to be affected and how, in turn, the conservation role of the units in the action area will be affected.
- Significance of anticipated effects to critical habitat.
- Whether, with implementation of the proposed action, critical habitat would remain functional to serve the intended conservation role for the species.

Guidance on determining adverse modification also is available in the ESA section 7 Consultation Handbook (USFWS 1998). The Handbook directs that “if an action affects critical habitat, but does not appreciably diminish the value of constituent elements essential to the species’ conservation, the adverse modification threshold is not exceeded.”

Actions not likely to adversely modify or jeopardize critical habitat include those that would be implemented in compliance with the Recovery Plan (USFWS 2002) including:

- Increasing and improving suitable and potentially suitable habitat
- Surveying, monitoring, and research
- Public education and outreach
- Recovery progress tracking
- Ensuring implementation of laws, policies, and agreements that benefit the flycatcher

### **3.1.4 METHODOLOGY**

#### **Affected Environment**

Previous discussions on the definition and determination of proposed critical habitat highlighted two spatial elements: stream segment endpoint (length of an area) and lateral extent (width of an area). The lengths of stream segments proposed for designation as critical habitat are constant in space and time. They were identified through a process incorporating the personal observations of experts, aerial and satellite imagery, distributional data on the locations of large and small flycatcher populations, and use of the “29 km (18 mile) connectivity radius” guideline. Mapping of stream segment endpoints was accomplished using Geographic Information System (GIS) technology, as described below.

The lateral extent (see Section 1.3.3) of proposed critical habitat will also remain constant from decade to decade. The distribution, abundance, and quality of riparian habitat within the lateral extent boundaries will change, however, depending on flooding events, channel meander within the larger floodplain, human developments within the floodplain, and other dynamic aspects of fluvial systems. The determination of lateral extent was based primarily on pre-existing data sources that delineated the approximate 100-year floodplain and secondarily on visual

interpretation of remote sensing data to identify the limits of riparian vegetation commonly associated with the 100-year floodplain.

Lateral extent boundaries were refined by classifying riparian habitat into one of two categories: 1) Riparian Vegetated and 2) Riparian Developed. The Riparian Vegetated category includes areas still in a natural state such as riparian forest, vegetated and unvegetated wetlands, water bodies, and any undeveloped or unmanaged lands within the approximate riparian zone. The Riparian Developed category includes areas with urban/suburban development, agriculture, utilities, and mining/extraction activities. Areas in the Riparian Developed category are not included in the proposed critical habitat designation because they do not exhibit PCEs and therefore do not meet the definition of critical habitat. Lateral extent boundaries were refined to exclude Riparian Developed areas.

In summary (see Section 2.2.2), stream segments selected as proposed critical habitat contribute to the conservation of the subspecies and exhibit the primary constituent habitat elements required by the subspecies, habitat necessary to provide for the goals of the Recovery Plan, and a flycatcher population at a single site or a collection of sites with high connectivity supporting 10 or more territories. The selected stream segments possess riparian habitat essential for nesting, non-nesting, territorial, dispersing, and migrating flycatchers.

Descriptions of the affected environment presented in Section 3.2 below are based on available reports, plans, and datasets including, but not limited to, the Recovery Plan for the southwestern willow flycatcher (USFWS 2002); proposed and final rules for critical habitat; draft economic analysis for critical habitat; U.S. Forest Service (USFS), Bureau of Land Management (BLM), Bureau of Reclamation (BOR), and Army Corps of Engineers (ACOE) reports and plans; and field data compiled by the U.S. Geological Survey (USGS) and others.

These descriptions are augmented by landcover data for all states in the project area. Landcover acreages were calculated using Gap Analysis Program (GAP) landcover datasets for California, Colorado, Arizona, Utah, New Mexico, and Nevada. GAP datasets are intended for planning level analysis and are mapped at a 1:100,000 scale. Each state develops its own GAP datasets, and landcover classifications vary between the states. To establish a uniform comparison of landcover in proposed critical habitat across all states, landcover classification was summarized into five general classes: Agricultural, Riparian, Upland, Urban, and Water. Land ownership into 10 classes: BLM, BOR, Local (City/County), Military, Private, State, Tribal, USFS, USFWS, and Water. Gaps between datasets were classified as Unknown. The datasets were merged into a single layer that was reclassified into these general landcover and land ownership classes. Unclassified areas or gaps between datasets were classified as Unknown. Due to the scale and limited accuracy of the data, due to changes in land ownership and other classes, acreage calculations for ownership and landcover should be considered as approximations.

Because of their small scale and low resolution, GAP datasets are limited in their application. The GAP-mandated minimum mapping unit for landcover is 150 hectares for upland vegetation, and 40 hectares for riparian vegetation. In preparation of GAP coverages, areas smaller than the minimum mapping unit were incorporated into an adjacent polygon, resulting in the misclassification of some areas and a general lack of detail in the final GAP product. Consequently, riparian vegetation may be misclassified as upland vegetation due to the fact that many riparian areas are smaller than the 40-hectare minimum mapping unit.

Landcover classes and ownership coverages were overlaid with polygons for each critical habitat stream segment to determine the approximate acres of affected cover type and ownership. These acreages were then used in the Affected Environment descriptions and in the analysis of the effects of Alternative A. Exclusion Areas were then subtracted from the acreages used for the Alternative A analysis to determine the acres affected under Alternative B. The remaining acreages, after eliminating the Exclusion Areas from the analysis, were then used in the analysis of the effects of Alternative B.

## **Impacts**

Potential impacts of flycatcher critical habitat designation to identified resources were assessed in the following manner:

### **Costs of Section 7 consultations for federal agencies and non-federal project proponents.**

These include opportunity costs associated with allocating staff time to the consultation process, costs associated with delay of the Proposed Action until consultation is completed, and direct monetary expenditures to implement any reasonable and prudent alternatives and any associated project delays.

**Increased likelihood that primary constituent elements will be maintained.** The requirement to consult on activities within designated critical habitat may cause action agencies and project proponents to modify their proposals to reduce, minimize, or avoid impacts to PCEs. If a consultation is initiated, then the outcome of critical habitat designation could be modification of the proposal to limit impacts to PCEs or imposition of reasonable and prudent alternatives that would reduce impacts to PCEs.

Likewise, it is assumed that critical habitat exclusion areas would also be protective of PCEs. Areas excluded from critical habitat designation include those areas managed under approved or pending HCPs and lands owned or managed by the DoD. The DoD exclusion areas, for reasons of national security, could become exempt from habitat conservation, but the total critical habitat exclusion area within DoD lands is relatively small.

In the following sections of this document, the impacts to each resource of added consultation costs and the benefits or costs of an increased likelihood of maintaining PCEs are assessed. The PCEs for the flycatcher are described in Section 1.3.2. The impact assessments consider the consultation history for the subspecies, the location and kind of projects addressed in those consultations, and the resources and activities addressed.

## **Economics**

A separate analysis was conducted to assess the potential economic impacts associated with the proposed designation of critical habitat for the flycatcher (Industrial Economics 2005). The analysis developed an estimate of the economic costs incurred since the subspecies was listed and projected the costs (potential future impacts) that could be incurred after the decision record is issued. Using best available data, the analysis considered: 1) the economic efficiency (i.e., the opportunity costs) associated with the commitment of resources to comply with critical habitat conservation measures; and 2) the distribution of economic impacts, including an assessment of local or regional impacts, of flycatcher conservation within designated critical habitat. The analysis assessed the economic costs incurred since the subspecies was listed and projected the estimated costs (potential future impacts) that could be incurred after the decision record is issued.

Information from the economic analysis was incorporated into this environmental assessment, where appropriate; however, the broad scope of the analysis included costs of actions since the subspecies was listed in 1995 and 20-year forecasts of potential future impacts. The analytical scope of this environmental assessment is limited to the potential impacts that would result from the designation of flycatcher critical habitat. Therefore, the economic analysis that was conducted separately from this EA is only partially germane to this analysis.

### 3.1.5 SOUTHWESTERN WILLOW FLYCATCHER SECTION 7 CONSULTATION HISTORY

Formal section 7 consultations for the flycatcher from the time of its listing through 2004 were compiled and analyzed to identify the types and location of projects, action agencies and other characteristics. These consultations are summarized in Table 3.1 below.

Of the 136 formal consultations during this period, 36 were with the ACOE, 26 with the BLM, and 22 with the USFS. Other agency consultations included the Federal Highway Administration (FHWA) (14), the Department of Agriculture (USDA) (1), the DoD (3), the USFWS (12), the BOR (9), the National Park Service (NPS) (2), the Environmental Protection Agency (EPA) (3), the Department of Transportation (DOT) (2), the Nuclear Regulatory Commission (NRC) (1), the Bureau of Indian Affairs (BIA) (1), the Federal Energy Regulatory Commission (FERC) (1), the Federal Emergency Management Agency (FEMA) (1), and a state agency (2). The largest numbers of consultations were in Arizona (56) and California (56). There were 9 consultations in New Mexico, 10 consultations in Colorado, 4 in Nevada, and 1 in Utah. Table 3.1 summarizes these consultations by activity category.

**Table 3.1.** Formal Consultations, 1994–2004

Activity Category	Number	Activities
Land Development	4	Storm water runoff, bridges, utilities
Federal Lands Management	16	Fire suppression, exotic species control, forest plans, stream restoration, roads, pesticide use, land exchange
Grazing	20	Grazing programs, allotment management plans
Military	3	Military
Recreation	2	Recreational facility development, management plan
Resource Management Plans	11	Federal land management, agency resource management planning
Mineral	1	Sand and gravel extraction
ESA Section 10	9	Section 10, fire suppression, private lands
Transportation	23	Bridge and road construction / maintenance, erosion control
Tribal	3	Land development, water exchange
Utilities	5	Pipelines, fiber optic networks, maintenance
Water Management	36	Dam and reservoir operations and maintenance, flood control, water exchange, diversion structures, erosion control, operations and maintenance, wastewater

**Table 3.1.** Formal Consultations, 1994–2004

Activity Category	Number	Activities
Fisheries	3	Non-native fish control, development of fish ponds
<b>Total</b>	<b>136</b>	

Source: USFWS 2004a

### *3.2 AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES*

As described in Section 2.2.2, Alternative A would designate stream segments in 21 Management Units within 5 Recovery Units as critical habitat for the southwestern willow flycatcher. These stream segments occur in southern California, southern Nevada, southwestern Utah, Arizona, New Mexico and south-central Colorado. Similarly, Alternative B would designate streams segments as critical habitat in the same Management Units in the same states, but would exclude, under section 4(b)(2) of the ESA, areas managed under Habitat Conservation Plans (HCPs), lands managed under Safe Harbor Agreements, and lands owned and managed by the DoD.

#### **3.2.1 SOILS**

Soil types, though highly variable, are of a predominantly alluvial origin within proposed flycatcher critical habitat. Soil/mineral resources are dynamic from reach to reach, and within each reach. Depending on local topography and geomorphology within stream reaches, alluvium can vary from coarse gravel and cobbles to fine silt and sand sedimentary deposits. In the period 1994–2004, there has been one formal section 7 consultation involving effects to the flycatcher associated with a proposed sand and gravel mining operation in San Diego County, California. Formal section 7 consultation was with the ACOE, and no incidental take of the subspecies was anticipated.

##### *3.2.1.1 NO ACTION ALTERNATIVE*

Under the No Action Alternative, the effects on soil and resources within and along the riparian corridors of the recovery area would not change, as the section 7 consultation process would only be initiated for "may affect" determinations of effects on flycatchers. No section 7 consultations would be conducted pursuant to the critical habitat provisions of the ESA. The number of potential consultations would continue to be the same as under current conditions.

##### *3.2.1.2 ALTERNATIVE A*

Critical habitat designation would require re-initiation of section 7 consultations for sand and gravel mining projects. Designation would also result in a small, but unknown, increase in the number of additional section 7 consultations for proposed sand and gravel projects affecting flycatcher critical habitat. Re-initiated consultations would be conducted for ongoing projects affecting designated critical habitat. Re-initiation of consultations and new consultations would incur additional administrative costs for USFWS, action agencies, and project proponents.

Increased section 7 consultations would likely have beneficial conservation-related effects to flycatcher PCEs, resulting in maintenance of soils and habitat substrates.

### 3.2.1.3 ALTERNATIVE B

Designation of critical habitat under this alternative would decrease the number of re-initiated section 7 consultations for ongoing projects and decrease the number of additional section 7 consultations, when compared to Alternative A because Alternative B would exclude approximately 30,445 acres from critical habitat designation. Effects to soil resources would be generally the same as for Alternative A, as maintenance of PCEs is expected as a result of the HCPs and other conservation management plans that are the basis for the exclusions.

### 3.2.2 WATER RESOURCES

Human activities have introduced numerous changes in the natural flow of rivers and streams in the Southwest, producing river and stream hydrology and geomorphology that are a combination of natural and artificial processes. These changes include dams and reservoirs, flood control and diversion structures, canals, groundwater management, wastewater discharges, stream channelization, and levees.

As a subspecies that depends on riparian environments for breeding and nesting, the flycatcher is sensitive to and dependent upon the quantity, the changes, and fluctuations of water resources within its habitat. Major rivers within the area proposed for critical habitat designation include the Santa Margarita, Colorado, San Luis Rey, Santa Ynez, Little Colorado, Gila, Santa Ana, Rio Grande, Virgin, and San Pedro rivers. Runoff from the watersheds and drainage basins within these river systems creates the riparian habitat that supports the flycatcher. The spatial distribution of critical habitat is a reflection of these river and stream flows, and of the water resource management activities described above. Representative water use and water withdrawals within the water resource regions of the recovery area that potentially affect critical habitat are depicted in Table 3.2.

**Table 3.2** Surface Water Use and Withdrawals

Water Region	Water Use		Water Withdrawals					
	Population Served (Thousand Persons)	Acres (Thousand Acre-Feet)	Public	Irrigation	Livestock	Industrial	Mining	Thermal Power
Rio Grande	735	968	1471	5150	39	11	62	2
Upper Colorado	407	1470	119	7840	60	7	26	164
Lower Colorado	2510	938	782	4710	45	53	17	19
Great Basin	1050	1060	285	4500	96	102	83	24
California	17400	7060	3230	20400	507	605	87	226
Total	22102	11496	4563	42600	747	778	275	435

Source: USFWS 2002

<sup>1</sup>Units are in acre-feet per year

There are approximately 4,600 dams within the current flycatcher recovery area, defined as structures that are 6 feet or higher, or providing reservoirs of 15 acre-feet or more (USFWS 2002). Water impoundments created by the dams, and the fluctuating levels of water within the reservoir, are capable of creating flycatcher nesting habitat. Major dams and water impoundments that provide this type of habitat include Hoover Dam and Lake Mead on the Colorado River, Isabella Lake on the Kern River, and Roosevelt Dam and Theodore Roosevelt Lake on the Salt River. A description of the major dams and reservoirs within the recovery area are shown in Appendix A.

Dams and water impoundments can cause the loss of flycatcher nesting habitat. Dams trap sediments behind them that would otherwise replenish downstream floodplain soils that support riparian vegetation; dams change normal stream flow by reducing total annual flow, reducing annual peak flows, changing the timing of high and low flows, and altering the short-term fluctuations in stream flow. These changes in stream flow can affect riparian habitat by eroding downstream floodplains and changing the downstream landforms so that the potential to support vegetation communities favored by the flycatcher is lowered. Water nutrients, water temperature, and water salinity downstream can be modified by dam impoundments, with potentially deleterious impacts on aquatic and riparian vegetation communities that support the flycatcher downstream (USFWS 2002: Appendix I).

Diversion structures typically are low dams designed to divert river flows into canals and their distribution systems. Unlike the dams described above, water storage is not the primary function of water diversions. These structures, along with canals and lateral distribution ditches, conduct water to agricultural areas or urban water treatment facilities. During low-flow conditions, diversion structures usually divert some or all of a river-flow from the river, potentially dewatering downstream reaches and resulting in the loss of riparian habitat. Canals and water distribution systems are capable of providing flycatcher nesting habitat because they contain slow-moving water (by design), and if the canal beds and banks are not sealed, then seepage is capable of supporting riparian vegetation along the sides of the canal such as along the upper Gila River in New Mexico (Parker and Hull 1994).

The return of irrigation water and/or treated wastewater to stream channels can produce sufficient sustained, continuous flows in otherwise dry stream channels to support riparian habitat suitable for nesting and migrating flycatchers. This occurs at Las Vegas Wash, downstream from the city of Las Vegas, where wastewater sustains tamarisk-dominated riparian vegetation that supports migrant flycatchers. Irrigation return flows support riparian vegetation and, in some instances, raises groundwater levels that provide nesting habitat for the flycatcher, as occurs along the middle Rio Grande, and the lower and middle Gila River.

Channelization and levees, constructed to provide flood protection to properties near a river channel, typically create a single channel, relatively straight alignment on a previously meandering or braided waterway. These water control structures can confine the river within the channel or levee banks, separating the river from its natural floodplain, and thus limiting the extent and abundance of flycatcher riparian habitat. Subsequently, sediment deposition is concentrated within a narrow flood zone, which would otherwise be spread across the flood plain to support flycatcher nesting habitat. However, areas within or between levees can support flycatcher habitat if vegetation is not removed. Flycatcher nesting habitat within these channel or

levee areas include segments within the Lower Colorado River, the Rio Grande, and some coastal California streams (USFWS 2002).

In the period 1994–2004, water management activities subject to formal section 7 consultations involving effects to the flycatcher have occurred for 36 actions associated with water exchanges; operations and maintenance of existing facilities; flood control; operation of water diversions, erosion control structures, dams, and reservoirs; wastewater management; water agreements; construction; and unspecified activities. Formal consultations were with the ACOE, the BOR, the EPA, FEMA, Tribes, and the BLM. The states involved included New Mexico, Arizona, California, and Colorado. The anticipated take for water resource management was:

- Operations and Maintenance – inundation of approximately 1,150 acres with reduced productivity for 14 pair (Isabella Lake).
- Dam/Reservoir Operations – a take of 45 territories from habitat removal with a related take of 90 birds (Theodore Roosevelt Lake).
- Diversions and Erosion Control – a loss of 372 acres of critical habitat (Interim Surplus Criteria for the Lower Colorado River), and take of one pair of birds (Pagosa Area Water and Sanitation District).
- Flood Control – a loss of 16 acres of critical habitat, harassment of flycatchers, and a take of one pair of flycatchers (San Timoteo Creek Flood Control Project), take of a nest with 2 eggs/fledglings every 20 years due to inundation (Alamo Dam).
- An unquantifiable take from parasitism, loss of habitat, loss of nesting sites, and other disturbances involving 2 water exchanges (Cottonwood/Camp Verde CAP Water Transfer, and Kearney Wastewater Treatment), and Lower Colorado River Operations (USFWS 2004a).

Actions to conserve flycatchers and their nesting habitat both prior to and as an outcome of section 7 consultations have been implemented for water management activities including dam operations, flood control projects, and water diversions within the Santa Ana, San Diego, Kern, Middle Colorado, Bill Williams, Roosevelt, Verde, and the Middle Rio Grande Management Units. These actions included:

- Flycatcher surveying, monitoring, and habitat mitigation on the Santa Ana River, Mill Creek and San Timoteo Creek in the Santa Ana Management Unit;
- Development of flycatcher conservation programs and plans for the Cuyamaca Reservoir in the San Diego Management Unit;
- Delays in approval of the final operation and maintenance plan to accommodate flycatcher concerns for the San Luis Rey Flood Control Project in the San Diego Management Unit;
- Court-imposed temporary limit on water levels within Isabella Lake pending the USACE acquisition of land or easements upstream of Isabella Lake for conservation of the flycatcher;
- Conservation measures including surveying, monitoring, cowbird trapping, land acquisition, site restoration along the Lower Colorado River;



- Annual flycatcher monitoring above Alamo Dam in Bill Williams Management Unit;
- Conservation measures including land acquisition and habitat replacement, monitoring, cowbird trapping, research for the flycatcher within the Salt River Project and at Theodore Roosevelt Lake in the Roosevelt Management Unit;
- Diversion of water from the Salt River to Rock House Farms in the Roosevelt Management Unit to establish flycatcher nesting habitat;
- Conservation plan development for the flycatcher for Horseshoe and Bartlett Reservoirs within the Verde Management Unit;
- Conservation measures to protect and enhance flycatcher nesting habitat in the Verde Valley involving a water exchange;
- Flycatcher monitoring and nesting habitat restoration along the Middle Rio Grande, releasing supplemental water from flood control dams, providing active flycatcher territories with water, year-round water flows, and prevention of river recession to conserve nesting habitat for flycatcher (Industrial Economics 2005).

The actions directed toward conserving or maintaining flycatcher nesting habitat described above can have beneficial effects for water resources. These effects include: 1) maintenance or enhancement of water quality by erosion reduction; 2) improved surface water quantity; 3) attenuation of flooding; 4) water temperature regulation from preservation of riparian vegetation; 5) the raising of groundwater levels; 6) the reduction of sediment flow into reservoirs; and 7) the reduction and/or prevention of non-point source pollution.

Conservation actions have required expenditures of time and money to achieve, however, in general, flycatcher conservation actions have not prevented the construction or had a long-term impact to the operation of water impoundments, water diversions, groundwater pumping, and flood control projects. An exception is the San Luis Rey Flood Control Project where changes in vegetation clearing activities were altered to accommodate flycatcher conservation concerns. These changes have reduced the ability of the project to control a 270-year flood event to a 100-year flood event (Industrial Economics 2005).

Federal water management agencies such as BOR have limited legal discretion to modify existing rules of operation at reservoirs to prevent inundation of flycatcher nesting habitat. The Ninth Circuit Court of Appeals has held that a federal agency is not required to modify its activities to protect endangered species if it has no discretion to change its operations (USBOR 1998). The Lower Colorado River Multiple Species Conservation Program, see Section 3.2.8, which includes the river floodplain from above Lake Mead to the Southerly International Boundary with Mexico, does not include modification of water operations as a conservation measure.

The economic analysis (Industrial Economics 2005) of the flycatcher critical habitat designation proposal evaluates a scenario (Scenario 2) that projects what impacts to water resource projects would result if courts required action agencies to release water from impoundments to avoid inundating flycatcher habitat. In the majority of previous consultations, however, this has not occurred.

### *3.2.2.1 No ACTION ALTERNATIVE*

Under the No Action Alternative, the impacts on water resources within and along the riparian corridors of the recovery area would not change, as the section 7 consultation process would only be initiated for "may affect" determinations of effects on flycatchers. No section 7 consultations would be conducted pursuant to the critical habitat provisions of the ESA. The number of potential consultations would continue to be the same as under current conditions.

### *3.2.2.2 ALTERNATIVE A*

Critical habitat designation would require re-initiation of some section 7 consultations for water resource management projects. Designation would result in a small, but unknown, increase in the number of additional section 7 consultations for proposed water management activities affecting stream segments proposed as flycatcher critical habitat. Re-initiated consultations would be conducted for ongoing water management activities affecting designated critical habitat. Additional consultations would be conducted, beyond those that would be conducted without critical habitat designation, because federal action agencies would consult on water management activities for areas designated as critical habitat that previously they may not have considered to be occupied and/or because of the additional information, guidance, or clarification in the critical habitat proposal. Re-initiation of consultations and new consultations would incur additional administrative costs for USFWS, action agencies, and project proponents.

A potential outcome of increasing section 7 consultations for water management activities would be maintenance of flycatcher PCEs through conservation measures and improvements, protection, and acquisition of flycatcher habitats. The impacts to water management operation and maintenance activities under Alternative A would be similar to those described under the No Action Alternative because of the expectation that few projects and operations would be subject to consultation based solely on the presence of designated critical habitat. This is due to the scale and scope of these undertakings: water management projects can encompass extensive reaches of rivers and streams, affecting areas far upstream and downstream from the dam or diversion structure. Thus, it is likely that these areas would also be consulted upon under the jeopardy standard due to the presence of the flycatcher.

The Ninth Circuit held in Gifford Pinchot Task Force v. U.S. Fish and Wildlife Service, 378 F.3d 1059 (9th Cir. 2004), that the definition of jeopardy and adverse modification are different and that adverse modification protects specifically designated habitat necessary for recovery of the species. While there may have been no difference in the outcome of section 7 consultations involving both jeopardy and adverse modification determinations in the past, implementation of these two involves separate and distinct analyses.

While the outcomes of future consultations are dependent on the details of project proposals and the analysis of effects, it can still be expected, because the river segments proposed are occupied by flycatchers and the jeopardy and adverse modification are parallel though distinct analyses (that is, the jeopardy analysis evaluates potential impacts to the species while the adverse modification analysis evaluates potential impacts to the designated habitat areas), that the outcomes of jeopardy and adverse modification analyses, for this designation, will be closely linked. Conservation of the flycatcher will likely require maintenance of existing populations. Therefore, the conservation value of proposed critical habitat is to sustain existing populations found within those segments. Appreciable diminishment of the value of critical habitat would include any action that reduces the ability of that habitat to support existing populations.

Based on the above, effects to future water management activities and water resources from critical habitat designation are expected to be minor and not constrain any intended water management activities because: 1) the majority of previous completed section 7 consultations with and without critical habitat, covering significant water management and operations throughout the Southwest (i.e., the Lower Colorado River) have resulted in no or only minor project alterations; 2) few projects and operations would be subject to consultation based solely on the presence of designated critical habitat because the proposed segments are occupied by flycatchers; 3) the outcome of those few consultations based solely on critical habitat (i.e. those projects where the species is not consulted upon) that do not reach the threshold of adverse modification could only result in discretionary conservation recommendations to reduce impacts to PCEs, because there is no incidental take statement and/or reasonable and prudent measures for adverse affects to critical habitat; and 4) the small likelihood that reasonable and prudent alternatives developed under the jeopardy standard would be changed substantially with the addition of critical habitat designation.

### **3.2.2.3 ALTERNATIVE B**

Designation of critical habitat under this alternative would decrease the number of re-initiated section 7 consultations for projects affecting water resource activities and decrease the number of new section 7 consultations, when compared to Alternative A, as Alternative B would exclude approximately 140 miles of proposed stream segments from critical habitat designation. Effects to PCEs would be generally the same as for Alternative A as PCE maintenance within exclusion areas is expected as a result of implementation of the HCPs and other conservation management plans that are the basis for the exclusions.

### **3.2.3 VEGETATION**

Nesting flycatchers require dense, mesic (moist soil condition) shrub and/or tree communities 0.25 acres or larger with floodplains large enough to accommodate riparian patches at least 30-foot wide (USFWS 2002). These conditions are required in order to support the insect populations upon which the flycatcher feeds, and to provide suitable breeding and nesting cover and habitat structure. These conditions can be met at a wide variety of elevations with corresponding variations in vegetation. For simplicity, vegetation for nesting flycatchers can be divided into three broad types: native vegetation-dominated habitat, exotic-vegetation-dominated habitat, and mixed native/exotic vegetation-dominated habitat (USFS 2000). It should be noted that many flycatchers found migrating through riparian areas (dominated by both native and exotic plants) are detected in riparian habitats or patches that would be unsuitable for nesting (e.g., the vegetation structure is too short or sparse, or the patch is too small). Such migration stopover areas, even though not used for nesting are critically important resources affecting productivity and survival.

The Coastal California Recovery Unit (Santa Ynez, Santa Ana, and San Diego Management Units), stretches along the coast of southern California from just north of Point Conception south to the Mexico border (USFWS 2002). Southwestern willow flycatcher nesting habitat is native or native-dominated vegetation, typically comprising a low- to mid-elevation mixture of trees and shrubs, including Goodding willow (*Salix gooddingii*) and other willow species, cottonwood (*Populus* spp.), boxelder (*Acer negundo*), ash (*Fraxinus* spp.), alder (*Alnus* spp.), and buttonbrush (*Cephalanthus occidentalis*) (USFS 2000).

The Basin and Mojave Recovery Unit (Owens, Kern, Mojave, Salton Management Units) forms a broad geographic area that includes the arid interior lands of southern California and a small portion of extreme southwestern Nevada. All flycatcher territories are native or native-dominated riparian habitats. This region includes low- to mid-elevation vegetation, dominated in some areas by red willow (*Salix laevigata*) and Goodding willow, interspersed with areas dominated by nettles (*Urtica dioica*), cattails (*Typha* spp.), and bulrush (*Scirpus* spp.).

The Lower Colorado Recovery Unit (Little Colorado, Middle Colorado, Virgin, Pahrnagat, Bill Williams, Hoover-Parker, and Parker-Southerly International Border Management Units) is geographically large and ecologically diverse, and includes the Colorado River and its major tributaries from Glen Canyon Dam downstream to the Mexican border. Critical habitat vegetation characteristics range from pure native stands (including high-elevation and low-elevation willow) to exotic-dominated (predominantly tamarisk) stands.

The Gila Recovery Unit (Verde, Roosevelt, Middle Gila/San Pedro, and Upper Gila Management Units) includes the Gila River watershed, from its headwaters in southwestern New Mexico downstream to near the confluence with the Colorado River. Critical habitat vegetation within this unit is composed of approximately 60% native-dominated stands, with exotic-dominated (predominantly tamarisk) or mixed native-exotic stands in the remaining critical habitat stands. Within the Gila watershed, flycatcher nesting habitat can be divided into two distinct structural types: riparian scrub and riparian forest. Riparian scrub is dominated by scrubby willows and seepwillow (*Baccharis glutinosa*). Riparian forest habitat is dominated by Fremont cottonwood, tamarisk, Goodding willow, Arizona sycamore (*Plantanus wrightii*), and boxelder.

The Rio Grande Recovery Unit (San Luis Valley, Upper Rio Grande, Middle Rio Grande Management Units) encompasses the Rio Grande watershed, from its headwaters in southwestern Colorado downstream to the Pecos River confluence in southwestern Texas. Habitat vegetation within this unit is primarily native-dominated, but some exotic-dominated stands are present, including Russian olive (*Elaeagnus angustifolia*) and tamarisk (see Section 3.2.4).

Formal section 7 consultations for vegetation management or control are discussed under Fire Management (Section 3.8).

#### 3.2.3.1 NO ACTION ALTERNATIVE

Under the No Action Alternative, the effects on vegetation within and along the riparian corridors of the recovery area would not change, as the section 7 consultation process would only be initiated for "may affect" determinations of effects on flycatchers. No section 7 consultations would be conducted pursuant to the critical habitat provisions of the ESA. The number of potential consultations would continue to be the same as under current conditions.

#### 3.2.3.2 ALTERNATIVE A

Critical habitat designation would require re-initiation of section 7 consultations for projects affecting vegetation. Designation would result in a small, but unknown, increase in the number of additional section 7 consultations for proposed projects affecting flycatcher critical habitat. Re-initiated consultations would be conducted for ongoing projects affecting designated critical habitat. Additional consultations would be conducted, beyond those that would be conducted

without critical habitat designation, because federal action agencies would consult on project activities in areas designated as critical habitat that previously they may not have considered to be occupied and/or because of the additional information, guidance, or clarification in the critical habitat proposal. Re-initiation of consultations and new consultations would incur additional administrative costs for both USFWS, action agencies, and project proponents.

Increased section 7 consultations would likely have beneficial, conservation-related effects to PCEs. This would result in beneficial effects to designated critical habitat and vegetation because riparian vegetation is a flycatcher PCE.

### *3.2.3.3 ALTERNATIVE B*

Designation of critical habitat under this alternative would decrease the number of re-initiated section 7 consultations and decrease the number of new section 7 consultations, when compared to Alternative A, as Alternative B would exclude approximately 140 miles of proposed stream segments from critical habitat designation. Effects to PCEs would be generally the same as for Alternative A as PCE maintenance, and associated benefits to vegetation, within exclusion areas is expected as from the HCPs and other conservation management plans that are the basis for the exclusions.

## **3.2.4 EXOTIC VEGETATION**

Exotic, introduced, or alien plants are those species that have become recently established in a new ecosystem as a result of human activity or intervention. When these exotic species "naturalize" they spread widely and rapidly they are referred to as invasive, and can have adverse impacts on native ecosystems. These adverse impacts include a decrease in ecosystem plant species diversity by replacing or reducing the number of native plant species, and thus reducing the quality of habitat; and a loss or reduction of ecosystem functions when native plant species are eliminated or reduced.

Riparian habitats are typically dynamic ecosystems, characterized by flood flows that sporadically inundate and smother existing plants, redistribute sediment, and alter stream morphology. As such, they tend to be susceptible to the spread of invasive, exotic plants, which are often favored by surface disturbances (Sheley et al. 1995). While some exotic plants are strongly inferior replacements for native vegetation, the stands of two non-native exotic species, tamarisk and Russian olive, provide the vegetation structure desired by nesting flycatchers.

Tamarisk is a large shrub to small tree native to Eurasia that has expanded its distribution over the past century within floodplains and streambeds while native forests of willow, mesquite, and cottonwood have declined. Russian olive is a small tree also native to Eurasia that has become naturalized along riparian areas in the Southwest. The reason for the replacement of native plants by non-native tamarisk and Russian olive, and the their abundance in riparian ecosystems, is generally attributable to human-caused alterations of riparian areas. Human-caused increases in soil salinity, declining water tables, alterations of natural flood cycles and flood suppression, livestock grazing, vegetation clearing and ground disturbance, and recurring fire tend to favor these exotic species over native species (USFWS 2002).

Flycatcher productivity in tamarisk-dominated sites has been found, in some cases, to be equal to flycatcher productivity in sites dominated by native willow species, and in some instances flycatchers will preferentially use tamarisk even when willows are present. Russian olive also

provides nesting structures for flycatchers, but flycatcher productivity is generally lower in this habitat when compared to tamarisk. Data suggest that flycatcher nesting in tamarisk is extensive and provides suitable nesting habitat: range-wide, 86% of flycatcher nests were in tamarisk in mixed and exotic habitats; in Arizona, in 1998, 75% of the flycatcher nests were in tamarisk (USFWS 2002).

However, tamarisk produces dry leaf, stem, and branch litter that do not decay quickly, creating conditions that can increase fire hazards and alter natural fire regimes (see Section 3.2.6), it can increase soil salinity, and it does not support levels of other native wildlife biodiversity and productivity as high as that of native riparian vegetation (USDA 2003). For these reasons, efforts are presently being considered to control or reduce the spread of tamarisk. The U.S. Department of Agriculture, Animal and Plant Health Inspection Service (APHIS) is proposing to release the non-native leaf beetle (*Diorhabda elongata*) as a biological control agent of tamarisk in 14 states in the western U.S., including Colorado, Nevada, and Utah. It has not been proposed for release in Arizona, New Mexico, or southern California because a combination of day length and temperature south of latitude 37°N (the areas where flycatchers nest in tamarisk are south of 37°N latitude) prevent the beetle from becoming established in tamarisk (USDA 2003). A Draft EA, prepared by APHIS, has been reviewed by the USFWS. The USFWS concurs with APHIS that there may be little or no impact to the flycatcher, as a result of tamarisk control in the States where release of the leaf beetle is proposed; however, the agency has concerns about 1) the potential movement of the leaf beetle south into the more densely populated portions of the range of the flycatcher; and 2) about the control and monitoring of leaf beetle dispersal (USDA 2004, USFWS 2004c).

Past impacts of exotic vegetation management activities on flycatchers have been limited. In the period 1994–2004, exotic vegetation management activities subject to formal section 7 consultations involving effects to the flycatcher have occurred for 1 action involving exotic vegetation removal in Nevada (Pahranagat Management Unit). Formal section 7 consultation was with the USFWS, and the anticipated incidental take from this activity was the loss of 1 nesting pair due to habitat loss.

#### 3.2.4.1 NO ACTION ALTERNATIVE

Under the No Action Alternative, the impacts on exotic plant management within and along the riparian corridors of the recovery area would not change, as the section 7 consultation process would only be initiated for "may affect" determinations of effects on flycatchers. No section 7 consultations would be conducted pursuant to the critical habitat provisions of the ESA. The number of potential consultations would continue to be the same as under current conditions.

#### 3.2.4.2 ALTERNATIVE A

Critical habitat designation would require re-initiation of section 7 consultations for exotic plant management projects. Designation would result in a small, but unknown, increase in the number of additional section 7 consultations for proposed exotic plant management projects affecting flycatcher critical habitat. Re-initiated consultations would be conducted for ongoing projects affecting designated critical habitat. Additional consultations would be conducted, beyond those that would be conducted without critical habitat designation, because federal action agencies would consult on exotic plant management activities in areas designated as critical habitat that previously they may not have considered to be occupied habitat and/or because of the additional

information, guidance, or clarification in the critical habitat proposal. Re-initiation of consultations and new consultations would incur additional administrative costs for USFWS, action agencies, and project proponents.

The likely impacts to PCEs would be similar to current impacts: 1) exotic plant management and control would continue to have indirect, short-term adverse impacts on PCEs caused by riparian vegetation removal during control activities; and 2) there would continue to be indirect, long-term beneficial effects from restoration projects and activities that follow Recovery Plan guidelines to reestablish native riparian plant communities and patches suitable for flycatcher nesting. Project impacts and beneficial effects to flycatcher PCEs would affect designated critical habitat where removal of exotic species and subsequent replacement with native species would likely be beneficial to flycatcher PCEs, productivity, and conservation.

As previously discussed in Section 3.2.2.2, the Ninth Circuit held in Gifford Pinchot Task Force v. U.S. Fish and Wildlife Service, 378 F.3d 1059 (9th Cir. 2004), that the definition of jeopardy and adverse modification are different and that adverse modification protects specifically designated habitat necessary for recovery of the species. While there may have been no difference in the outcome of section 7 consultations involving both jeopardy and adverse modification determinations in the past, implementation of these two involves separate and distinct analyses.

While the outcomes of future consultations are dependent on the details of project proposals and the analysis of effects, it can still be expected, because the river segments proposed are occupied by flycatchers and the jeopardy and adverse modification are parallel though distinct analyses (that is, the jeopardy analysis evaluates potential impacts to the species while the adverse modification analysis evaluates potential impacts to the designated habitat areas), that the outcomes of jeopardy and adverse modification analyses, for this designation, will be closely linked. Conservation of the flycatcher will likely require maintenance of existing populations. Therefore, the conservation value of proposed critical habitat is to sustain existing populations found within those stream segments. Appreciable diminishment of the value of critical habitat would include any action that reduces the ability of that habitat to support existing populations.

Compared to current conditions, re-initiated and additional section 7 consultations on exotic vegetation control activities affecting designated critical habitat could alter project timing to occur outside of the flycatcher nesting season, but the project area and exotic vegetation control activity would not likely be affected because 1) of the long-term beneficial impacts that the activity would have on flycatcher conservation, and 2) because the impacts to occupied habitat from exotic vegetation management are currently being assessed in section 7 consultations on effects to the subspecies. Thus, the likely impacts of critical habitat designation on exotic species management activities would be minor.

#### *3.2.4.3 ALTERNATIVE B*

Compared to the No Action Alternative, the impacts of Alternative B, which would reduce designated critical habitat by excluding certain areas managed under federal, state, and tribal habitat conservation plans, would be similar to those described for Alternative A. Flycatcher PCEs would be maintained or conserved within both designated critical habitat and exclusion areas because of the implementation of conservation measures within both areas. The impacts to exotic plant management and the effects on critical habitat PCEs would be similar to Alternative

A, because exotic species management would continue to be implemented in designated critical habitat and in exclusion areas.

### 3.2.5 WILDLIFE AND FISHERIES

Hundreds of mammal, bird, amphibian, reptile, and fish species are dependent on riparian habitats and their associated aquatic habitats in the flycatcher recovery area. Brown (1994) lists wildlife species commonly found in southwestern riparian/wetland/aquatic habitats: boreal wetlands are inhabited by tree frogs, salamanders, relict native salmonid fishes, beaver, mice, and shrews; montane "canyon bottom" forests support beaver, raccoon, rodents, migratory songbirds, garter snakes, tree frogs, salamanders, and fish species that include dace, trout, and sucker. Great Basin riparian wetlands provide habitat for numerous minnow and chub species, migratory bats, muskrats, migratory waterfowl, and shorebirds. Interior and California riparian deciduous woodlands and forests support tree squirrels, opossums, gophers, bats, and common game species such as white-tailed deer, black bear, and wild turkey.

Wildlife and aquatic riparian community composition varies widely by state and river reach due to local and regional conditions such as elevation, climate, stream type, type and extent of upstream water management activities, proximity of agricultural and urban areas, and grazing pressure. Of particular importance to wildlife, fisheries, and listed species are the composition, quality, quantity, and extent of riparian vegetation present. Riparian systems provide numerous values for wildlife, including food; cover; water; shady and moist microclimates; woody structural components for roosting, perching, and nesting; inputs of nutrients and organic matter; and critical migration corridors (USACOE 1994).

#### Wildlife

The value of riparian/wetland habitats to wildlife is reflected by the fact that these habitats host a disproportionately large number of wildlife species relative to their areal extent in the landscape. For example, riparian/wetland habitats in the Southwest comprise only about 1% of the overall land area (Hubbard 1977), yet approximately 51% (84 species) of all southwestern nesting bird species are completely dependent on water-related habitats (Johnson et al. 1977). Another 26% (43 species) are partially dependent on these habitats. Riparian areas in the Southwest have been found to support up to 10.6 times the density of migrant birds as adjacent non-riparian areas (Stevens et al. 1977). In California, approximately 25% of the 502 native land mammal species and subspecies are largely dependent on riparian ecosystems (Trapp et al. 1984).

The riparian nesting bird community along streams in the Southwest is dominated by summer resident species that are neotropical migrants, i.e., species that breed in the U.S. and Canada and overwinter in Mexico or farther south. Within the riparian zone, many of these summer residents are specialists and exhibit narrow habitat requirements defined by vegetation composition and/or structure. For example, rails (*Rallidae*) and marsh wrens (*Cistothorus palustris*) are largely restricted to marsh habitat dominated by cattails (*Typha* spp.) and other native emergent vegetation. Willow flycatcher, Bell's vireo (*Vireo bellii*), and yellow warbler (*Dendroica petechia*) are generally dependent upon dense, early- to mid-successional stage vegetation. Gray hawk (*Asturina nitida*), common black-hawk (*Buteogallus anthracinus*), and yellow-billed cuckoo (*Coccyzus americanus*) are strongly associated with more mature riparian forest and woodland of taller structure. In contrast, mourning dove (*Zenaida macroura*), ash-throated



flycatcher (*Myiarchus cinerascens*), and blue grosbeak (*Passerina caerulea*) are habitat generalists making use of a wide variety of woody riparian vegetation types.

The widespread and extensive degradation and loss of southwestern riparian habitats over the last century has disproportionately reduced certain riparian vegetation types, with associated reductions in summer resident birds dependent upon those vegetation types. For example, yellow-billed cuckoo and southwestern willow flycatcher, although they may occur at the same mid-successional site, prefer mature riparian forest/woodland and early successional stage vertical vegetation types, respectively, that have been eliminated or greatly reduced in acreage in most of the Southwest. Their precarious status, then, is largely due to their specialization on riparian vegetation types that have declined due to human activities. However, the status of generalist summer resident birds has typically remained stable under current conditions.

The number of native mammal species using riparian habitats in the Southwest is less diverse than for birds. Most large, wide-ranging mammals (i.e., ungulates and carnivores) will make use of riparian areas where available in their home range at some point in their life cycle. Mammals restricted to riparian and riverine habitats in the Southwest include the river otter (*Lutra canadensis*) and beaver (*Castor canadensis*). Beaver in particular enhance riparian and riverine systems by felling mature trees, building dams, and creating more open-water habitat via beaver ponds. This makes them a cornerstone species for riparian systems in the Southwest by initiating succession, preventing erosion, and creating habitats necessary for a variety of other riparian plants and animals.

Many reptiles and amphibians are also limited to riparian and/or associated riverine habitats in the Southwest. For example, garter snakes (*Thamnophis* spp.), the Sonoran mud turtle (*Kinosternon sonoriense sonoriense*), leopard frogs (*Rana* spp.), and several species of toad (*Bufo* spp.) are dependent on riparian/riverine habitats for all or most of their life cycles. The Mexican garter snake (*Thamnophis eques*) has been petitioned for federal listing and at least historically occurred in flycatcher habitat. Other Southwest reptiles generally associated with uplands, including Gila monster (*Heloderma suspectum*), will preferentially use riparian habitats because of the moderate temperatures and greater abundance of food present in streamside areas.

## **Fisheries**

Fisheries habitat in the lower Colorado River system was historically characterized by large fluctuations in the seasonal hydrograph, accompanied by very large sediment loads. This seasonal flooding and the associated sediment loads resulted in a unique fisheries community represented by species adapted to high velocity flows and low visibility. This hydrological regime also resulted in shifting channels with separate or connected backwaters and oxbows. These backwaters provided warm, relatively safe nursery habitat for fry and young-of-the-year of many native fish species.

The current hydrology of the Colorado River system has been substantially altered through the construction of hydroelectric dams and irrigation diversions on the Colorado, Gila, and Salt Rivers. These structures have altered the historic flow regime, decreasing the variability of flow fluctuations and altering flow timing from spring-summer peaks to smaller daily peaks. Water releases from the dams is taken from the deepest parts of the reservoirs immediately behind the dam, resulting in clear, cold-water flows immediately downstream of the dams. These flows favor non-native salmonid species such as rainbow trout (*Onchorhynchus mykiss*) and brown trout (*Salmo trutta*) but do not provide ideal temperature or conditions for native species. Native fish

species are adapted to the historic temperature regime that included daytime water temperatures up to 70 to 80° F. (21–27° C.) during the summer and have not fared well under the current temperature and flow regimes.

Ten native fish species were historically found in the lower Colorado River. These included three marine/estuarine species: the spotted sleeper (*Eleotris picta*), the Pacific tenpounder (*Elops affinis*), and the striped mullet (*Mugil cephalus*). Only one specimen of the spotted sleeper has ever been catalogued; however, both the Pacific tenpounder and striped mullet are common. None of these species range extends beyond the current Imperial Dam in California (Minckley 1979).

The desert pupfish (*Cyprinodon macularius*) was historically found in the lower reaches of the Colorado and Gila rivers in the early 1900s. This species occupied backwaters and springs along the river margins (Minckley 1979). Its present range includes the lower Colorado River in Arizona and California downstream from Needles to the Gulf of California and to the delta in Sonora and Baja California (USFWS 2002).

Six other species historically occurred in this section of the river: bonytail chub (*Gila elegans*), roundtail chub (*Gila robusta*), Colorado pikeminnow (*Ptychocheilus lucius*), razorback sucker (*Xyrauchen texanus*), flannelmouth sucker (*Catostomus latipinnis*), and woundfin (*Plagopterus argentissimus*) (Minckley 1979). Roundtail chub typically inhabited tributary streams such as the Salt, Verde, and Gila Rivers and were not believed to be abundant in the lower mainstream Colorado River (Minckley 1973). Similarly, woundfin are also rare in the mainstream Colorado River with no fish collections reported since the turn of the century. Currently, its distribution is limited to the Virgin River (USFWS 1995). Low numbers of flannelmouth suckers historically occupied the lower Colorado River, however, this native population was extirpated (Minckley 1973). A population of 600 was transplanted from the Paria River to the mainstem Colorado River below Lake Mead in 1976. That population still currently exists. The remaining three native fish species, the Colorado pikeminnow, bonytail chub, and razorback sucker, made up the majority of the historic fish assemblage of the lower Colorado and Gila Rivers. All three of these species are currently federally listed as endangered.

In the period 1994–2004, a single formal section 7 consultation involving the flycatcher was undertaken for an action involving beach habitat building within the Grand Canyon in Coconino County, Arizona. Formal section 7 consultation was with the BOR, and an unquantifiable take of the subspecies, from habitat loss, was anticipated. In this instance, a temporary, man-made flood of water was released from Glen Canyon Dam with the purpose of enhancing the number and size of beaches in the river corridor.

### **Federal Threatened and Endangered Wildlife Species**

The wildlife species that are listed as endangered or threatened by the USFWS, or are proposed or candidates for listing that are likely to occur in the proposed critical habitat management units are listed in Table 3.3. The number and diversity of these species, including mollusks, fish, amphibians, reptiles, birds, and mammals attest to the value of riparian habitats for fish and wildlife.

**Table 3.3.** Federally Listed Wildlife Species That Could Occur in Southwestern Willow Flycatcher Recovery Units and Proposed Critical Habitat

Common Name	Scientific Name	Status	Recovery Unit				
			CC	BM	LC	G	RG
Apache trout	<i>Oncorhynchus apache</i>	T			X		
arroyo toad	<i>Bufo californicus</i>	E	X				
bald eagle	<i>Haliaeetus leucocephalus</i>	T	X	X	X	X	X
bonytail chub	<i>Gila elegans</i>	E			X		
California red-legged frog	<i>Rana aurora draytoni</i>	T	X				
California tiger salamander	<i>Ambystoma californiense</i>	E	X				
Chiricahua leopard frog	<i>Rana chiricahuensis</i>	T				X	
Colorado pikeminnow	<i>Ptychocheilus lucius</i>	E, XN			X	X	
desert pupfish	<i>Cyprinodon macularius</i>	E		X	X		
Gila chub	<i>Gila intermedia</i>	PE				X	
Gila topminnow	<i>Poeciliopsis occidentalis</i>	E				X	
Gila trout	<i>Oncorhynchus gilae</i>	E				X	
humpback chub	<i>Gila cypha</i>	E			X		
least Bell's vireo	<i>Vireo belli pusillus</i>	E	X	X			
least tern	<i>Sterna antillarum</i>	E					X
Little Colorado spinedace	<i>Lepidomeda vittata</i>	T			X		
loach minnow	<i>Tiaroga cobitis</i>	T				X	
Moapa dace	<i>Moapa coriacea</i>	E			X		
New Mexico springsnail	<i>Pyrgulopsis thermalis</i>	C				X	
ocelot	<i>Leopardus pardalis</i>	E				X	
Owens pupfish	<i>Cyprinodon radiosus</i>	E		X			
Owens tui chub	<i>Gila bicolor snyderi</i>	E		X			
piping plover	<i>Charadrius melodus</i>	T					X
razorback sucker	<i>Xyrauchen texanus</i>	E			X		
relict leopard frog	<i>Rana onca</i>	C			X		
Rio Grande silvery minnow	<i>Hybognathus amarus</i>	E					X
Santa Ana sucker	<i>Catsstomus santaanae</i>	T	X				
southern steelhead	<i>Oncorhynchus mykiss</i>	E	X				
spikedace	<i>Meda fulgida</i>	T				X	
unarmored threespine stickleback	<i>Gasterosteus aculeatus williamsoni</i>	E	X	X			

**Table 3.3.** Federally Listed Wildlife Species That Could Occur in Southwestern Willow Flycatcher Recovery Units and Proposed Critical Habitat

Common Name	Scientific Name	Status	Recovery Unit				
			CC	BM	LC	G	RG
Virgin River chub	<i>Gila seminuda</i>	E			X		
whooping crane	<i>Grus americana</i>	E, XN					X
woundfin	<i>Plagopterus agentissimus</i>	E, XN			X	X	
yellow-billed cuckoo	<i>Coccyzus americanus occidentalis</i>	C	X	X	X	X	X
Yuma clapper rail	<i>Rallus longirostris yumanensis</i>	E		X	X	X	

Federal Status Abbreviations

E = Endangered; T = Threatened; PE = Proposed Endangered; C = Candidate Taxon, Ready for Proposal; XN = Experimental, Non-essential Population (may apply in only a portion of a species' range)

Recovery Unit Abbreviations

CC = Coastal California; BM = Basin and Mojave; LC = Lower Colorado; G = Gila; RG = Rio Grande

### 3.2.5.1 NO ACTION ALTERNATIVE

Under the No Action Alternative, the beneficial or adverse impacts on wildlife, fisheries, and listed species (Table 3.3) within and along the riparian corridors of the recovery area would not change, as the section 7 consultation process would only be initiated for "may affect" determinations of effects on flycatchers. No section 7 consultations would be conducted pursuant to the critical habitat provisions of the ESA. The number of potential consultations would continue to be the same as under current conditions.

### 3.2.5.2 ALTERNATIVE A

Critical habitat designation would require re-initiation of section 7 consultations for projects that may affect wildlife, fisheries, and listed species (Table 3.3). Designation would also result in an increase in the number of additional section 7 consultations for proposed projects affecting flycatcher critical habitat. Re-initiated consultations would be conducted for ongoing projects affecting designated critical habitat. Additional consultations would be conducted, beyond those that would be conducted without critical habitat designation, because federal action agencies would consult in areas designated as critical habitat that previously they may not have considered to be occupied and/or because of the additional information, guidance, or clarification in the critical habitat proposal.

Increasing the number of section 7 consultations would likely have beneficial conservation-related effects to flycatcher PCEs, with beneficial effects to wildlife, fisheries, and listed species due to the maintenance of riparian ecosystem integrity through the conservation of flycatcher PCEs.

An increased number of section 7 consultations would also likely benefit a variety of wildlife species through the incremental conservation of flycatcher PCEs. Birds such as Bell's vireo, blue grosbeak, and yellow warbler would benefit from conservation of nesting habitat comprised of dense riparian vegetation with thickets of trees and shrubs interspersed with small areas of open

water or marsh or shorter/sparser vegetation. Nesting raptors such as Common Black-Hawk and Gray Hawk would benefit from maintenance of more mature riparian forest stands. Wild turkey would benefit from the conservation of riparian trees as roosting sites. Insectivorous birds, mammals, reptiles, and amphibians would all benefit from the conservation of diverse insect populations that have been identified as a flycatcher PCE. Riparian mammals would primarily benefit from conservation of riparian habitat that would provide cover, shelter, and foraging areas.

In general, the designation of critical habitat and subsequent conservation or maintenance of riparian habitat, including associated backwaters and oxbows, would have beneficial effects on fish by providing valuable refuge habitat for young-of-the-year native and non-native species. Maintenance of instream flows would have a generally beneficial long-term impact for all fish species. Conservation of flycatcher PCEs would assist in maintaining instream flows because healthy riparian habitat serves to reduce erosion, increase bank storage of water through maintenance of the riparian water table, reduce water temperature through shading and evapotranspiration, and provide opportunities for increased insect prey.

Most listed riparian vertebrates and invertebrates would benefit from conservation of flycatcher PCEs through increased consultations because these consultations would enhance riparian ecosystem integrity. Listed mammals, birds, reptiles, and amphibians would respond positively to maintenance of riparian tree and shrub communities, particularly those in close association with open water or marsh habitat. However, it should be noted that designation of flycatcher critical habitat would have only minor effects (either beneficial or adverse) on existing populations of razorback sucker, Colorado pikeminnow, and bonytail. The Colorado pikeminnow is no longer found in the lower Colorado River System, and razorback sucker and bonytail are confined to large reservoirs that would not be impacted by critical habitat designation because critical habitat designation would not cause agencies to change dam and reservoir operations and water levels, and water quality would not be influenced.

#### **3.2.5.3 ALTERNATIVE B**

Relative to Alternative A, designation of critical habitat under Alternative B would decrease the number of re-initiated section 7 consultations for ongoing projects and decrease the number of additional section 7 consultations. This is because Alternative B would exclude approximately 30,445 acres from critical habitat designation, when compared to Alternative A.. While the number of section 7 consultations would increase compared to the No Action Alternative, the effects on wildlife, fisheries, and listed species would be the same as described under Alternative A because essentially there would be no difference with respect to PCE conservation between designated critical habitat and exclusion areas.

#### **3.2.6 FIRE MANAGEMENT**

The lack of fire-adapted riparian vegetation and the high-water content of riparian forests suggest that, historically, fire has not been a major disturbance of flycatcher riparian habitat. However, a trend is evident that fire is becoming a more common form of disturbance to the riparian habitat that supports the flycatcher. Because riparian plant communities are not fire-adapted, the impact of wildland fire can be catastrophic, as many native riparian plant species do not quickly regenerate after fire. The increased prevalence of wildland fire disturbance is attributed to increased fuel loading within riparian habitat resulting from flood control, replacement of native

vegetation by exotic species, many of which are highly flammable; river dewatering, and increased ignition sources associated with increased human activity (USFWS 2002).

Flood control tends to prevent dead vegetation, litter, and woody debris from being swept away or redistributed during the scouring actions of normal high water flows, which allows woody material and dead vegetation to accumulate. The replacement of native riparian trees and shrubs by tamarisk tends to increase fuel loads within flycatcher nesting habitat: dense stands of tamarisk produce large quantities of dry leaf litter, and dead stems and branches do not decay quickly. This relatively dense ground material supports intense, fast-moving fires that further alter the historic fire regime and accelerate the replacement of native riparian vegetation. River dewatering increases the frequency and intensity of wildland fire by reducing the water content of riparian vegetation, thereby causing the stress-related death and desiccation of riparian vegetation. Dewatering also contributes to the replacement of native vegetation by more flammable exotic species, such as tamarisk. Livestock grazing within riparian habitat can contribute to establishing exotic vegetation. Increasing recreation along rivers and stream riparian corridors increases the fire potential and the instances of human-caused fires within these areas (USFWS 2002)

An additional consequence of the trend toward the increased frequency of riparian fire is that the fires tend to burn during the flycatcher summer nesting season, causing direct loss of nests, young, and habitat. Indirectly, nesting success within a burned nesting area can be lost or impaired for several years after a fire. Reducing wildfire risk through hazardous fuel reduction and suppressing wildfire can be beneficial for flycatchers (USFWS 2002).

In 2000, approximately 4.8 million acres of land burned by catastrophic wildland fires throughout the western U.S. A National Fire Plan and a 10-year Comprehensive Strategy have since been developed and implemented as an interagency, tribal, state, and local government commitment to protect the public, communities, and natural resources. The goals and guidelines of the 10-year Comprehensive Strategy are: 1) develop a hazardous fuels reduction program, through prescribed burning and other fuel reduction treatments; 2) restore fire-adapted ecosystems; 3) reduce the impacts of unwanted fire on communities and natural resources; and 4) promote community assistance (USDI et al. 2001). Table 3.4, below, depicts the number of fire-treated acres for 2001-2002, including prescribed fire and other non-fire fuels treatments, for the six states included in the flycatcher recovery area on BLM-administered public lands. "Fuels treatment" and "hazardous fuel reduction" are synonymous terms and refer to management actions that seek to reduce the rate of spread, intensity, and resistance to control of wildland fires by reducing available fuel. Examples include tree thinning, chipping, herbicide use, prescribed burning, and actions that reduce or remove live and dead woody fuels. In comparison, wildland fire suppression refers to an unplanned, unwanted wildland fire where the objective is to extinguish the fire. Examples of these types of fires include naturally caused fires, unauthorized human-caused fires, and prescribed fires that have escaped their boundaries and are uncontrolled (National Fire Plan 2004).

**Table 3.4.** Acres of Fire Treatments, 2001–2002

State	2001	2002
Arizona	19,735	24,270
California	1,704	5,206
Colorado	18,792	20,907
Nevada	3,942	16,787
New Mexico	9,599	49,938
Utah	15,875	20,365

Source: BLM 2004

One of the goals of the National Fire Plan is to reduce wildland fire risks to communities. Communities most often at risk of wildland fire lie within the Wildland-Urban Interface (WUI), which is an area where houses meet or intermingle with undeveloped wildland vegetation. The National Fire Plan and 10-Year Comprehensive Strategy have set a priority on reducing hazardous fuel loads in WUIs in order to reduce the risks to human life and property (National Fire Plan 2004). Approximately 26,000 acres of WUI-classified areas lie within proposed flycatcher critical habitat, of which approximately 74% (19,337 acres) are concentrated in 7 counties within the flycatcher recovery area (Industrial Economics 2005).

In 2003, as part of the National Fire Plan, alternative section 7 process regulations were published, with the purpose of reducing potential delays on concurrence by the USFWS for National Fire Plan actions that action agencies (e.g., BLM, USFS) have determined are "not likely to adversely affect any listed species or designated critical habitat." The alternative section 7 process allows action agencies to more efficiently conduct the section 7 process in WUI areas. The implications for wildland fire management are timely environmental reviews and rapid implementation of fire risk reduction projects (68 FR 68254).

Flycatcher conservation measures implemented by agencies in response to listing and section 7 consultations for fire management activities include: conducting fuel treatments outside of the flycatcher nesting season, avoidance of occupied habitat as a water dip site for fire suppression activities unless there are risks to life or property, avoiding fuel treatments and other activities within buffer zones around known nest sites or within unsurveyed suitable habitat where nests could occur, restricting fuel treatments areas within potential or suitable flycatcher habitat, and replanting burned and thinned areas with native plants. Fire management activities are generally limited within proposed flycatcher critical habitat on USFS and NPS lands because of the location of flycatcher habitat within riparian zones (Industrial Economics 2005).

Past impacts of fire management activities on flycatchers have been limited. In the period 1994–2004, fire management activities subject to formal section 7 consultations involving effects to the flycatcher have occurred for three actions involving fire suppression in Arizona and Colorado. Formal section 7 consultations were with the BLM and USFWS, and the anticipated incidental take from these three activities were: harm and harassment of flycatchers from loss of 10 acres of habitat, and the take of four nesting pairs through harassment. It should be noted that emergency section 7 consultations for wildland fire suppression are typically conducted after the fact.

#### *3.2.6.1 No ACTION ALTERNATIVE*

Under the No Action Alternative, the impacts on fire management within and along the riparian corridors of the recovery area would not change, as the section 7 consultation process would only be initiated for "may affect" determinations of effects on flycatchers. No section 7 consultations would be conducted pursuant to the critical habitat provisions of the ESA. The number of potential consultations would continue to be the same as under current conditions.

#### *3.2.6.2 ALTERNATIVE A*

Critical habitat designation would require re-initiation of section 7 consultations for ongoing fire management projects affecting flycatcher critical habitat. Designation would result in additional section 7 consultations for proposed fire management activities affecting designated critical habitat. Additional consultations would be conducted, beyond those that would be conducted without critical habitat designation, because federal action agencies would consult on fire management activities in areas designated as critical habitat that previously they may not have considered to be occupied and/or because of the additional information, guidance, or clarification in the critical habitat proposal. The additional consultations would likely be initiated for designated critical habitat identified as potentially benefiting from fire management and in WUI areas affecting designated flycatcher critical habitat. Re-initiation of consultations and new consultations would incur additional administrative costs for USFWS, action agencies, and project proponents.

Fire management activities would produce short-term, adverse impacts to flycatcher PCEs from riparian vegetation disturbance or removal, potential loss of nesting sites, harassment, and site disturbance, but are expected to produce long-term beneficial impacts to flycatcher habitat by reducing the risks of critical habitat loss from catastrophic, uncontrolled wildland fire.

Actions by agencies in response to listing and as outcomes of section 7 consultations have not significantly constrained fire management. Conservation activities and measures have focused on timing and avoiding occupied locations, limitations that allow fire management goals to be achieved. Also, the alternative section 7 regulations for fire management limit the delays that fire management projects experience to complete consultations. Because of the above and the expectation that few fire management projects would be subject to consultation solely because of the presence of critical habitat and the benefits to flycatchers from reducing risks of wildfire, designating flycatcher critical habitat is expected to have minimal impacts on fire risk reduction projects and wildfire suppression.

#### *3.2.6.3 ALTERNATIVE B*

Compared to Alternative A, designation of critical habitat under this alternative would decrease the number of re-initiated section 7 consultations for ongoing fire management projects and reduce the number of additional section 7 consultations for proposed fire management projects. The likely effects on fire management would be the same as Alternative A because critical habitat PCEs would be maintained or conserved within both designated critical habitat and exclusion areas, and because fire management activities within designated critical habitat and exclusion areas would be similar to that described for Alternative A. wildland fire suppression Designation of critical habitat under this alternative would decrease the number of re-initiated section 7 consultations for ongoing projects and decrease the number of additional section 7 consultations, when compared to Alternative A because Alternative B would exclude



approximately 30,445 acres from critical habitat designation. Constraints and costs to fire management activities resulting from section 7 requirements in the excluded areas, while minor, would not occur. Effects to PCEs would be generally the same as for Alternative A, as maintenance of PCEs is expected as a result of the HCPs and other conservation management plans that are the basis for the exclusions.

### 3.2.7 LIVESTOCK GRAZING

Livestock grazing is generally declining in the Southwest on BLM and USFS-managed lands. In general, grazing levels tend to fluctuate in response to forage and market conditions, with climatic conditions as a primary influence on forage conditions in the Southwest. The drought that has been affecting western rangelands since 1996 is a major cause of declining grazing levels, and Tables 3.5 and 3.6 illustrate the trend in grazing levels on USFS and BLM managed lands. Note that the number of cattle grazing operators in the tables below are agency totals for each state within the recovery area, and are not representative of only those operators with grazing allotments within riparian areas proposed for critical habitat designation.

**Table 3.5.** Number of BLM Cattle Grazing Operators and AUMs, 2001–2003

State	2001		2002		2003	
	Operators	AUMs <sup>1</sup>	Operators	AUMs	Operators	AUMs
Arizona	629	425,973	616	365,264	606	309,402
California	401	120,818	416	166,782	395	101,972
Colorado	1,305	286,540	1,278	273,810	1,151	185,146
Nevada	511	1,077,823	497	1,045,481	466	892,670
New Mexico	1,994	1,262,244	2,000	1,197,429	1,940	1,101,674
Utah	1,196	534,994	1,204	590,717	1,036	323,789
<b>Total</b>	<b>6,036</b>	<b>3,708,392</b>	<b>6,011</b>	<b>3,639,483</b>	<b>5,594</b>	<b>2,914,653</b>

Source: BLM 2004

<sup>1</sup> An animal Unit Month (AUM) is the amount of forage required by a mature, 1000 lb. cow and calf (or equivalent) for one month.

**Table 3.6.** Number of USFS Authorized Cattle Grazing Permittees, 2000–2002

State	2000	2001	2002
Arizona	429	378	349
California	487	472	418
Colorado	753	757	742
Nevada	140	140	144
New Mexico	938	919	881
Utah	984	984	951
<b>Total</b>	<b>3,731</b>	<b>3,650</b>	<b>3,485</b>

Source: USFS 2004

The impacts of livestock grazing are considered to be an important factor in the degradation of riparian habitats in the arid Southwest. Excessive grazing can produce a drying of riparian areas, a reduction in vegetation structure and volume, changes in vegetation composition, soil compaction, and increases in soil erosion and ground temperatures (USFWS 2002). Key attributes of flycatcher habitat, such as dense deciduous vegetation and high water tables, can be adversely affected by livestock grazing. Also, riparian areas are disproportionately preferred by cattle over surrounding uplands because of access to water, abundant and palatable forage, a cooler and shadier microclimate, and moderate slopes allowing easy access to these resources (USFS 2000).

Livestock grazing impacts can vary with grazing intensity and season of use. Late spring and summer grazing tends to have more severe impacts on flycatcher habitat because livestock grazing at this time removes new riparian vegetation growth, ultimately producing even-aged, non-reproducing communities of mature cottonwoods and decadent willows with little understory. Such habitat is not suitable for nesting southwestern willow flycatchers (USFS 2000). Grazing in spring and summer can also potentially impact flycatchers by disturbing resident and nesting flycatchers.

The Recovery Plan states that while livestock grazing can adversely affect flycatcher habitat, grazing can be managed to limit adverse impacts. However, managing grazing to conserve flycatcher habitat does incur costs. Since listing in 1995, management actions taken to conserve flycatcher habitat consisted of fencing off or excluding livestock from riparian areas, restricting livestock from grazing in riparian areas during the flycatcher nesting season (an approximately 3 and a half month period), removing trespassing livestock from riparian areas, limiting seasonal grazing to the winter, developing water sources outside of riparian areas, reducing utilization levels within allotments, and cowbird trapping. It is estimated that, as a result of flycatcher conservation actions, grazing was reduced by approximately 4,000 to 9,000 AUMs per year on BLM and USFS managed lands since 1995 (Industrial Economics 2005).

The USFWS has developed guidelines identifying when consultation would be triggered by proposed grazing activities on lands managed by the USFS Southwestern Region (USFWS 2004e). Within this region, the flycatcher occurs in Arizona on the Tonto and Apache-Sitgreaves National Forests and on private lands adjacent to the Prescott and Coconino National Forests. In New Mexico, flycatchers occur on the Carson and Gila National Forests and on private lands adjacent to the Gila National Forest.

All of the three following criteria must be met for proposed grazing activities on USFS lands in Arizona and New Mexico in order to reach a determination of "may affect, not likely to adversely affect" for the southwestern willow flycatcher (USFWS 2004e):

- Grazing activities in the action area do not measurably or detectably (cannot be measured or detected with current technology as related to baseline surveys) reduce the suitability or regeneration of flycatcher habitat.
- Indirect effects occurring within the action area resulting from livestock grazing on the allotment are determined to be insignificant or discountable.
- Livestock grazing should comport with or be more conservative than the descriptions provided in Table 2, Appendix G of the Recovery Plan (USFWS 2002).

Proposed grazing activities on USFS-administered lands in Arizona and New Mexico that do not meet the criteria listed above are subject to formal USFWS consultation. Federal agencies are required to make the initial determination of whether or not other actions would affect the flycatcher or designated critical habitat. If the action agency determines that there would be no effect, then no consultation with the USFWS is required.

In the period 1994–2004, formal section 7 consultations involving potential effects to the flycatcher have occurred for 20 actions involving grazing on BLM- and USFS-administered federal lands in New Mexico, Arizona and California. These consultations involved BLM and USFS grazing allotments in the San Diego, Santa Cruz, Santa Ana, San Francisco, Mojave, Verde, Roosevelt, Upper Gila, Middle, and Gila Management Units. The anticipated take of flycatcher associated with these consultations was estimated to be: 20 nests due to cowbird nest parasitism, loss of nesting sites, and modification of nesting habitat (Santa Cruz, Verde), harassment of 5 nesting pairs and degradation of 5 territories from livestock management (Middle Gila), and an unquantifiable take as a result of nest parasitism, modification of nesting habitat, and/or loss of nesting sites (Roosevelt, Verde, Upper Gila) (USFWS 2004a).

#### *3.2.7.1 NO ACTION ALTERNATIVE*

Under the No Action Alternative, the impacts on livestock grazing within and along riparian corridors would not change, as the section 7 consultation process would only be initiated for "may affect" determinations of effects on flycatchers. No section 7 consultations would be conducted pursuant to the critical habitat provisions of the ESA. The number of potential consultations would continue to be the same as under current conditions.

#### *3.2.7.2 ALTERNATIVE A*

Critical habitat designation would require re-initiation of some section 7 consultations for livestock grazing, and would result in a small, but unknown, increase in the number of additional section 7 consultations for livestock grazing. Re-initiated consultations would be conducted for ongoing grazing activities affecting flycatcher critical habitat. Additional consultations would be conducted, beyond those that would be conducted without critical habitat designation, because federal action agencies would consult on livestock grazing activities in areas designated as critical habitat that previously they may not have considered to be occupied and/or because of the additional information, guidance, or clarification in the critical habitat proposal. Re-initiation of consultations and new consultations would incur additional administrative costs for USFWS, action agencies, and project proponents.

Increasing the number of section 7 consultations would likely have beneficial effects on flycatcher PCEs because of the conservation measures employed by livestock grazing managers as part of efforts to benefit flycatchers and as an outcome of any section 7 consultations. Based on past grazing-related conservation measures and the subsequent costs to grazing activities, and the expected increase in consultations from critical habitat designation, it is likely that there would be an increase in beneficial effects to flycatchers and an increase in impacts to grazing.

It should be noted, as discussed above in Section 3.2.2.2, the Ninth Circuit held in Gifford Pinchot Task Force v. U.S. Fish and Wildlife Service, 378 F.3d 1059 (9th Cir. 2004), that the definition of jeopardy and adverse modification are different and that adverse modification protects specifically designated habitat necessary for recovery of the species. While there may have been no difference in the outcome of section 7 consultations involving both jeopardy and

adverse modification determinations in the past, implementation of these two involves separate and distinct analyses.

While the outcomes of future consultations are dependent on the details of project proposals and the analysis of effects, it can still be expected, because the river segments proposed are occupied by flycatchers and the jeopardy and adverse modification are parallel though distinct analyses (that is, the jeopardy analysis evaluates potential impacts to the species while the adverse modification analysis evaluates potential impacts to the designated habitat areas), that the outcomes of jeopardy and adverse modification analyses, for this designation, will be closely linked. Conservation of the flycatcher will likely require maintenance of existing populations. Therefore, the conservation value of proposed critical habitat is to sustain existing populations found within those segments. Appreciable diminishment of the value of critical habitat would include any action that reduces the ability of that habitat to support existing populations.

The additional incremental benefit to flycatchers and costs to grazing operations from critical habitat designation beyond that resulting from listing is expected to be small to negligible, in terms of potential modification to or restrictions on grazing activities. This is because: 1) of the expectation that few grazing allotments would be subject to consultation requirements based solely on the presence of flycatcher designated critical habitat within an allotment due to the large scale on which livestock grazing operations typically occur; 2) impacts to habitat are currently being assessed in section 7 consultations on effects to the subspecies; 3) the relatively small area used by flycatchers within an allotment; 4) grazing allotments that do not encompass territories or riparian habitats, but have the potential to affect flycatchers through indirect effects such as cowbird parasitism and upland watershed effects, have taken conservation actions and/or have been the subject of consultations; 5) few grazing operations would be subject to consultation based solely on the presence of designated critical habitat because the proposed stream segments are occupied by flycatchers; 6) the outcome of those few consultations based solely on critical habitat (i.e., those grazing operations where the species is not consulted upon) that do not reach the threshold of adverse modification could only result in discretionary conservation recommendations to reduce impacts to PCEs, because there is no incidental take statement and/or reasonable and prudent measures for adverse effects to critical habitat; and 7) the small likelihood that reasonable and prudent alternatives developed under the jeopardy standard would be changed substantially with the addition of critical habitat designation.

Thus, impacts to grazing activities from critical habitat designation would be similar to current conditions. It should also be noted that there are impacts to grazing that cannot be separated from the impacts caused by critical habitat designation. Impacts such as drought, current and future market trends and fluctuations, and supplemental forage availability contribute to the cumulative impacts to livestock grazing. While the impacts from flycatcher critical habitat designation are expected to have minor impacts on current livestock grazing conditions, an acknowledgment must be given to other factors that contribute to the cumulative impacts on grazing.

#### *3.2.7.3 ALTERNATIVE B*

Designation of critical habitat under this alternative would decrease the number of re-initiated section 7 consultations for livestock grazing and decrease the number of new section 7 consultations for livestock grazing, when compared to Alternative A because Alternative B would exclude approximately 30,445 acres from critical habitat designation. The likely beneficial effects on the flycatcher and on flycatcher PCEs and the impacts on livestock grazing

would be the same as Alternative A because designated critical habitat and the exclusion areas would be managed to maintain or conserve flycatcher PCEs within their boundaries.

### **3.2.8 LAND MANAGEMENT**

In the period 1994–2004, federal land management activities subject to formal section 7 consultations involving effects to the flycatcher have occurred for 26 actions involving habitat construction, road construction, land management activities and planning, land exchange, pesticide use, forest management plan activities, and resource management plan activities. Formal consultations were with the ACOE, the BOR, the Federal Highway Administration (FHA), the USFWS, the National Park Service (NPS), and the BLM. The states involved included Arizona, California, Colorado, Utah, Nevada, and New Mexico. The anticipated take flycatchers for land management associated with these consultations was:

- Habitat construction – an unquantifiable take of habitat, and a loss of riparian understory habitat;
- Road construction – an unquantifiable take of individuals, with a take of habitat, feeding and sheltering resources, with an increased rate of mortality, starvation, and predation;
- Stream restoration – take of one flycatcher through harassment;
- Unspecified land management – take of two nests every five years due to flooding, and beaver activities; an unquantifiable take of habitat through loss of cottonwood and willow seedlings, bark stripping, and trailing;
- Exotic species – take of one nesting pair from harassment and harm; take of one pair from loss of prey;
- Pesticide use – take of one pair;
- Resource management plans – take of two pair; take of one nesting attempt every three years through cowbird nest parasitism, loss of habitat from fire, recreation, and development (USFWS 2004a).

### **Refuges**

National wildlife refuges are areas set aside and managed with the specific purpose of conserving fish and wildlife. Refuges are managed by the USFWS under the authority of the National Wildlife Refuge System (NWRS) Act of 1966 and the NWRS Improvement Act of 1997 (Improvement Act). The Acts expressly state that wildlife conservation is the priority of NWRS lands, and that the biological integrity, diversity, and environmental health of the refuge are to be maintained. The mission of the NWRS is to administer a national network of lands and waters for the conservation, management, and where appropriate, restoration of the fish, wildlife, and plant resources and their habitats within the United States for the benefit of present and future generations of Americans.

Lands within the NWRS are different from other, multiple-use public lands, in that they are closed to all public uses unless specifically and legally opened to those uses that have been determined to be compatible for the refuge. A compatible use is a use that, in the professional judgment of the refuge manager, will not interfere with or detract from the refuge's purpose. The NWRS Improvement Act has identified 6 priority refuge uses that include hunting, fishing,

wildlife observation, photography, environmental education, and interpretation. These 6 uses receive priority consideration over other uses in planning and management.

Under the Improvement Act, a comprehensive conservation plan (CCP) is required for managing each refuge. The Improvement Act requires that a CCP be completed for each refuge by 2012, and that the public have an opportunity for active involvement in the plan development and revision. Thus, the CCP planning process requires compliance with the Improvement Act and with NEPA.

As stated in the Proposed Rule, National Wildlife Refuges (NWRs) considered essential to the conservation of the flycatcher include:

- Bill Williams NWR (Parker, Arizona);
- Cibola NWR (Blythe, Arizona);
- Imperial NWR (Yuma, Arizona);
- Havasu NWR (Needles, California);
- Alamosa/Monte Vista NWR (Alamosa, Colorado);
- Bosque del Apache and Sevilleta NWRs (Socorro, New Mexico);
- Pahrnagat NWR (Alamo, Nevada).

All of these refuges will be developing or have developed (Sevilleta and Alamosa NWRs) CCPs that will provide for protection and management of federally listed species and sensitive natural habitats. The CCPs are subject to section 7 consultation requirements. During consultations, the consistency of the CCP with the conservation needs of the flycatcher is evaluated.

### **Lower Colorado River Multiple Species Conservation Plan (LCR MSCP)**

A regional partnership known as the Lower Colorado River Multi-Species Conservation Program (LCR MSCP) was formed shortly after the 1994 designation of critical habitat for four endangered fish species in the Colorado River Basin. The program involves a broad-based state/federal/tribal/private regional effort that includes water, hydroelectric power, and wildlife management agencies in Arizona, California, and Nevada.

The LCR MSCP, when implemented, will work toward the recovery of threatened and endangered species, including the southwestern willow flycatcher, through habitat and species conservation. The habitat-based program will also attempt to reduce the likelihood of additional species listings under the ESA while accommodating current water diversions and power production and optimizing opportunities for future water and power development. The program is planned for implementation over a 50-year period to address future federal agency consultation needs under the ESA section 7, and non-federal agency needs for endangered species incidental take authorization approval under ESA section 10. Interim measures to benefit the flycatcher were initiated during the planning period for the LCR MSCP and will continue until the Habitat Conservation Plan (HCP) is approved and implemented.

The final EIS (USBOR et al. 2004) and final HCP (LCRMSCP 2004) were completed and released in December 2004, and approved in April 2005. The HCP will fund projects to maintain existing habitat for listed species (including the flycatcher), restore 8,132 acres of native riparian/riverine habitats, implement population enhancement measures, conduct monitoring and

research necessary to assess and improve conservation measure effectiveness, and initiate a variety of other conservation measures. The planning area encompassed by the HCP consists of over 450 miles of the Colorado River corridor from the full pool elevation of Lake Mead south to the International Boundary with Mexico, including the lower reaches of the Virgin River, Muddy River (Nevada), Bill Williams River (Arizona), and Gila River (Arizona).

#### *3.2.8.1 NO ACTION ALTERNATIVE*

Under the No Action Alternative, the impacts on federal land management within and along the riparian corridors of the recovery area would not change, as the section 7 consultation process would only be initiated for "may affect" determinations of effects on flycatchers. No section 7 consultations would be conducted pursuant to the critical habitat provisions of the ESA. The number of potential consultations would continue to be the same as under current conditions.

#### *3.2.8.2 ALTERNATIVE A*

Under Alternative A, the effects of critical habitat designation on federal land management would include an increased number of re-initiated section 7 consultations and the increased number of additional section 7 consultations for land management and planning activities affecting flycatcher critical habitat. Re-initiated consultations would be conducted for ongoing management activities affecting designated critical habitat. Additional consultations would be conducted, beyond those that would be conducted without critical habitat designation, because federal action agencies would consult on management activities in areas designated as critical habitat that previously they may not have considered to be occupied and/or because of the additional information, guidance, or clarification in the critical habitat proposal.

The likely effect of increasing the number of section 7 consultations would be conservation or maintenance of flycatcher PCEs within designated critical habitat by modifying projects to reduce impacts to PCEs, relocating activities away from designated critical habitat, or imposing reasonable and prudent alternatives that would reduce impacts to PCEs.

The effects on federal land management on designated critical habitat are unknown because the outcomes of section 7 consultations are unknown and cannot be predicted, and thus the impacts on land resource management plans cannot be predicted. However, based on past section 7 consultations, the effects of critical habitat designation on land management could include: mapping, surveying, and monitoring of flycatcher habitat; implementing grazing restrictions and cowbird control efforts; monitoring grazing impacts on critical habitat; monitoring and implementing exotic plant removal and replanting native riparian species projects; monitoring recreation restrictions in designated critical habitat; mitigation of road construction, stream restoration and reclamation projects, pesticide and herbicide use projects; and resource management plan revisions to preserve PCEs.

#### *3.2.8.3 ALTERNATIVE B*

Designation of critical habitat under this alternative would decrease the number of re-initiated section 7 consultations for land management and decrease the number of additional section 7 consultations, when compared to Alternative A. Alternative B would exclude approximately 30,445 acres from critical habitat designation, which would include those areas managed under various other federal, state, and tribal HCPs, and with the likely additional exclusion of land managed under the LCR MSCP. The impacts to land management activities would be unknown,

as described under Alternative A. The impacts to flycatcher PCEs within designated critical habitat and in areas managed under HCPs would be the same as described under Alternative A.

### 3.2.9 LAND USE

Table 3.7 provides the approximate acreages for principal land uses for Alternatives A and B. Section 3.1.4.1 provides a description of how these data were derived.

In the period 1994–2004, activities subject to formal section 7 consultations involving potential effects to the flycatcher have occurred for four actions in Arizona involving land use (bridge repair, utilities, and storm water control) on NPS lands, with the ACOE, and the EPA as lead agencies. The anticipated take of flycatchers for these actions were 2 flycatcher territories (Verde Management Unit), 1 bird each year that a bridge site is occupied in Yavapai County, Arizona (Verde Management Unit), and an unquantifiable take in the form of a degraded watershed and riparian area (San Francisco Management Unit).

**Table 3.7.** Land Use Acreages for Alternatives A and B

<b>Land Use (Acres)</b>	<b>Alternative A</b>	<b>Alternative B</b>
Agricultural	72,140	71,424
Riparian	138,307	133,436
Upland	102,221	95,026
Urban	12,525	8,461
Water	48,951	35,398
Unclassified	2,080	2,035
<b>Total</b>	<b>376,225</b>	<b>345,780</b>

#### 3.2.9.1 NO ACTION ALTERNATIVE

Under the No Action Alternative, the impacts on land uses within and along the riparian corridors of the recovery area would not change, as the section 7 consultation process would only be initiated for "may affect" determinations of effects on flycatchers. No section 7 consultations would be conducted pursuant to the critical habitat provisions of the ESA. The number of potential consultations would continue to be the same as under current conditions.

#### 3.2.9.2 ALTERNATIVE A

Under Alternative A, critical habitat designation would require re-initiation of some section 7 consultations for land use activities. Designation would result in an increase in the number of additional section 7 consultations for proposed land use projects affecting flycatcher critical habitat. Re-initiated consultations would be conducted for ongoing land use activities affecting designated critical habitat. Additional consultations would be conducted, beyond those that would be conducted without critical habitat designation, because federal action agencies would consult on management activities in areas designated as critical habitat that previously they may not have considered to be occupied and/or because of the additional information, guidance, or clarification in the critical habitat proposal.



Increasing the number of section 7 consultations would likely have beneficial effects on flycatcher PCEs because of the conservation measures used to benefit flycatchers and as an outcome of section 7 consultations, which would result in the conservation or maintenance of flycatcher designated critical habitat PCEs.

Based on the expected increase in consultations from critical habitat designation, it is likely that there would be an increase in indirect impacts to land use activities and effects on designated critical habitat that might place limitations or restrictions on land use (e.g., crop spraying, infrastructure construction). However, the additional incremental impact to land use activities from critical habitat designation beyond that resulting from listing is expected to be minor, in terms of potential modification to or restrictions of land use projects. This is because of the expectation that few land use activities would be subject to consultation requirements based solely on the presence of flycatcher designated critical habitat, and because impacts to habitat are currently being assessed in section 7 consultations on effects to the subspecies.

#### *3.2.9.3 ALTERNATIVE B*

Compared to Alternative A, the designation of critical habitat under Alternative B would decrease the number of re-initiated section 7 consultations for various land use activities and decrease the number of additional section 7 consultations for those activities. The impacts of this alternative to land use would be similar to those described under Alternative A because areas excluded under Alternative B would continue to conserve flycatcher PCEs. Conservation of flycatcher PCEs within exclusion areas managed under HCPs could indirectly limit or constrain land activities in the same way as they would within designated critical habitat.

#### **3.2.10 ECONOMICS**

A separate economic analysis of critical habitat designation for the flycatcher has been conducted (Industrial Economics 2005). The analysis assessed the economic costs incurred since the subspecies was listed as well as costs that would be incurred with designation, including all costs resulting from conservation activities associated with the flycatcher. As previously discussed in Section 3.1.4, the broad scope of the separate economic analysis included costs of actions since the subspecies was listed in 1995 and 20-year forecasts of potential future impacts after issuance of the decision record. That analysis considered: 1) the economic efficiency (i.e., the opportunity costs) associated with the commitment of resources to comply with critical habitat conservation measures; and 2) the distribution of economic impacts, including an assessment of local or regional impacts, of flycatcher conservation on designated critical habitat. The scope of this environmental assessment is limited to the potential impacts that would result from the designation of flycatcher critical habitat; therefore not all of the conclusions of the economic analysis are germane. Following is a description of the economic setting in the flycatcher recovery area.

Within the counties of the six-state recovery area that contain proposed designated critical habitat, over 640,000 business establishments operate and employ approximately 10 million individuals. The service industry includes approximately 52% of the total job base, and retail trade employment constitutes approximately 10% of all jobs in the counties. Manufacturing accounts for approximately 12% of all employment. These three employment sectors combined comprise 74% of all jobs in the recovery area (Industrial Economics 2005). Table 3.8 depicts economic activity within the 37 counties that contain proposed critical habitat, as measured by

annual payroll. The data indicate that the highest annual payroll is in the services sector, followed by manufacturing and retail.

**Table 3.8.** Annual 2001 Payroll for Selected Industries Within Counties Containing Designated Critical Habitat

Industry	Arizona	California	Colorado	Nevada	New Mexico	Utah	Industry Total
Agriculture, Forestry, Hunting, Fishing	\$33,244	\$215,138	\$4,036	\$2,695	\$260	-	\$255,373
Construction	\$5,391,201	\$16,219,720	\$16,347	\$2,250,490	\$1,039,547	\$79,650	\$24,996,955
Retail	\$5,823,809	\$21,521,277	\$38,740	\$1,836,405	\$1,266,302	\$115,564	\$30,602,097
Finance and Insurance	\$4,804,284	\$22,780,666	\$11,488	\$949,385	\$660,391	\$22,340	\$29,228,554
Mining	\$212,428	\$763,011	\$4,539	\$15,528	\$14,663	-	\$1,010,169
Real Estate	\$1,216,551	\$6,500,708	\$2,717	\$479,722	\$166,404	\$6,336	\$8,372,438
Manufacturing	\$7,725,634	\$42,605,422	\$6,831	\$673,415	\$1,040,758	\$64,640	\$52,116,700
Services	\$23,325,127	\$115,082,213	\$81,853	\$10,963,666	\$4,444,270	\$249,451	\$154,146,580
Total Payroll	\$48,532,278	\$225,688,155	\$166,551	\$17,171,306	\$8,632,595	\$320,427	

Source: From Industrial Economics 2005

### 3.2.10.1 NO ACTION ALTERNATIVE

Under the No Action Alternative, the impacts to economies within and along the riparian corridors of the recovery area would not change, as the section 7 consultation process would only be initiated for "may affect" determinations of effects on flycatchers. No section 7 consultations would be conducted pursuant to the critical habitat provisions of the ESA. The number of potential consultations would continue to be the same as under current conditions.

### 3.2.10.2 ALTERNATIVE A

Critical habitat designation would require re-initiation of section 7 consultations for ongoing projects and activities affecting flycatcher critical habitat. Designation would also result in an increase in the number of additional section 7 consultations for proposed activities affecting flycatcher critical habitat. Additional consultations would be conducted, beyond those that would be conducted without critical habitat designation, because federal action agencies would consult on activities in areas designated as critical habitat that previously they may not have considered to be occupied and/or because of the additional information, guidance, or clarification in the critical habitat proposal.

The likely effect of increasing the number of section 7 consultations would be conservation or maintenance of flycatcher PCEs by limiting, restricting, or modifying proposed economic activities affecting critical habitat because "may affect" determinations for proposed activities

analyzed through the section 7 process would require reasonable and prudent alternatives and conservation measures to conserve designated critical habitat.

The likely impacts of the increased number of section 7 consultations on economic efficiency and distribution within the recovery area could be indirect, adverse impacts that include: 1) increased expenditures of time by federal agencies, including the USFWS, on additional section 7 consultations; and 2) administrative costs and expenditures of federal funds by agencies and non-federal funds by project proponents to complete the consultations, and to develop project alternatives and mitigation to maintain the PCEs of designated critical habitat. Specifically, the administrative costs would include those costs associated with attending meetings, preparing letters and biological assessments and management plans, and the development and preparation of biological opinions for formal section 7 consultations. These costs are estimated to range between \$1.6 and \$5.4 million annually (Industrial Economics 2005). However, in the long-term, should critical habitat designations and section 7 consultations aid in recovery or de-listing of the subspecies, then these cost-related adverse impacts would be largely eliminated because section 7 consultation expenditures of time and money on biological opinions, project modifications, surveying and monitoring, administrative costs, and conservation of PCEs would not longer be incurred for the flycatcher.

#### *3.2.10.3 ALTERNATIVE B*

Under Alternative B, the impacts to economic efficiency and distribution from critical habitat designation would be similar to but at a lesser degree than Alternative A, as designation of critical habitat under this alternative would decrease the number of re-initiated and new section 7 consultations. Alternative B would exclude approximately 30,445 acres from critical habitat designation. Compared to Alternative A, Alternative B would probably have fewer adverse economic impacts because it could achieve flycatcher subspecies conservation goals, including conservation or maintenance of critical habitat PCEs within exclusion areas through management of HCPs, without increasing the number of re-initiated and new section 7 consultations. Reducing the number of section 7 consultations would reduce the indirect adverse economic impacts associated with the costs to complete those consultations.

#### **3.2.11 RECREATION**

Recreational activities within the flycatcher recovery area are widespread and varied. Recreation in the area is focused on federal lands managed by the BLM, USFS, NPS, and BOR, and includes opportunities for such activities as camping, hiking, fishing, rock climbing, off-highway vehicle use, hunting, bird watching, sightseeing, bicycling, river rafting, and personal watercraft use.

Riparian areas receive a disproportionately high recreational use in the arid Southwest when compared to other areas, and riparian areas near urban areas receive greater use than those in more remote locales (USFWS 2002). While there is little evidence of direct impacts from recreation on flycatcher habitat from recreational activities, increasing human populations, coupled with the attraction of limited riparian areas in the Southwest for recreation, make flycatcher habitat vulnerable to this activity (USFWS 2002). Habitat disturbances from recreational use can be major. In the Southwest, riparian habitat tends to be more linear, narrow, and dissimilar to adjacent habitats, when compared to other areas of the U.S. The impacts on flycatcher habitat from recreational use include: soil compaction and loss of surface soil

horizons; alteration of soil moisture and temperature; altered soil microbiota; habitat fragmentation; reduced woody debris (from wood gathering); altered plant species composition; altered foliage height diversity; reduced plant density or cover, and plant regeneration; an increased risk of accidental wildfire; an increase in human waste and garbage; the introduction of native (e.g., brown-headed cowbirds) and exotic predators (e.g., feral dogs and cats); and displacement of the flycatcher by recreation facilities, roads, trails, noise, and humans (USFWS 2002).

As the southwestern U.S. becomes increasingly urbanized, public demand for recreation is expected to increase, with recreational use in and subsequent impacts on riparian areas. The combined population in California, New Mexico, Arizona, Nevada, Colorado, and Utah is expected to increase from 50,636,000 to 68,642,000 during 2005 to 2025 (U.S. Census 2002). Related to population growth, the trend in the growth of recreational activity in the Southwest also indicates an increase, based on National Park Service annual visitor data. Table 3.9 illustrates recreational visitor use for 2001 through 2003 in several major national parks within the flycatcher recovery area. Similarly, Table 3.10 shows increasing recreational site visitor use on BLM-managed lands.

**Table 3.9.** Annual Visits to National Parks

National Park	2001	2002	2003	2002-2003 % Change
Grand Canyon NP	4,104,809	4,001,974	4,124,900	3%
Mesa Verde NP	513,409	406,385	438,590	8%
Joshua Tree NP	1,280,917	1,178,376	1,283,346	9%
Yosemite NP	3,368,731	3,361,867	3,378,664	1%
Lake Mead NRA (Nevada)	6,349,160	5,662,713	5,936,686	5%

Source: NPS 2004

**Table 3.10.** Annual Use of Recreational Sites on BLM-Administered Public Lands (in Visitor Days)

State	2001	2002	2003	2002-2003 % Change
Arizona	12,887 <sup>1</sup>	3,211	3,512	9%
California	6,988	6,790	6,692	-1%
Colorado	2,389	1,026	1,124	10%
Nevada	1,301	708	898	27%
New Mexico	1,240	481	611	27%
Utah	3,224	1,535	1,855	21%

Source: BLM 2004

<sup>1</sup>Units are in Visitor Days. One Visitor Day represents an aggregate of twelve visitor hours to a site or an area.

These visitor data suggest that recreational use will intensify on public lands in the Southwest, with disproportionate recreational use in riparian areas, including critical flycatcher habitat, with the potential for impacts to those ecosystems as discussed above.

Past impacts on recreational opportunities within the recovery area resulting from flycatcher conservation actions include: potential periodic inundation of the South Fork Wildlife Area (SFWA) (less than 1,100 acres inundated upstream from Isabella Lake) by Isabella Lake and a prohibition on overnight camping and motorized vehicle travel in the (SFWA) in the Kern Management Unit, and closures within the Tonto National Forest that limit vehicle use and fires on both the Salt River and on Theodore Roosevelt Lake at the Tonto Creek end (Roosevelt Management Unit). Also, the opportunities for fishing and hunting in the Tonto Creek area are not prohibited, but the level of recreational use has probably declined because of inconvenient access, with hunters and fishermen having dispersed to other locations (Industrial Economics 2005).

During 1994–2004, section 7 formal consultations involving recreation activities on effects to the flycatcher have occurred for two actions involving the NPS at Lake Mead NRA in Arizona/Nevada and the ACOE in Los Angeles, California. An incidental take of the subspecies was anticipated at Lake Mead, with harm and loss of greater than 5% of occupied/suitable habitat due to harassment of nesting and migrating birds by recreationists.

#### *3.2.11.1 NO ACTION ALTERNATIVE*

Under the No Action Alternative, the impacts on recreation resources within and along the riparian corridors of the recovery area would not change, as the section 7 consultation process would only be initiated for "may affect" determinations of effects on flycatchers. No section 7 consultations would be conducted pursuant to the critical habitat provisions of the ESA. The number of potential consultations would continue to be the same as under current conditions.

#### *3.2.11.2 ALTERNATIVE A*

Under Alternative A, critical habitat designation would require re-initiation of some section 7 consultations for recreational activities and recreational facilities. Designation would result in a small, but unknown, increase in the number of additional section 7 consultations for proposed recreational activities and facilities affecting flycatcher critical habitat. Re-initiated consultations would be conducted for ongoing recreational activities and recreational facility operations affecting designated critical habitat. Additional consultations would be conducted, beyond those that would be conducted without critical habitat designation, because federal action agencies would consult on recreational activities in areas designated as critical habitat that previously they may not have considered to be occupied and/or because of the additional information, guidance, or clarification in the critical habitat proposal. Re-initiated and new consultations would result in additional administrative costs for USFWS, action agencies and project proponents.

Increasing the number of section 7 consultations would likely have beneficial conservation-related effects to southwestern willow flycatcher PCEs because section 7 consultations on recreational activities could limit, restrict, or modify proposed recreational activities and/or construction affecting designated critical habitat, resulting in reduced erosion, reduced soil compaction, reduced potential harassment of nesting sites by recreationists, and reduced risks of human-caused wildland fire.

Proposed activities analyzed through the section 7 process could require mitigation to conserve designated critical habitat PCEs. However, the additional incremental benefit to flycatchers and impacts to recreational opportunities from critical habitat designation beyond that resulting from listing is expected to be small, in terms of potential modification to or restrictions on recreational activities. This is because impacts to habitat from recreational activities are currently being assessed in section 7 consultations on effects to the subspecies. Based on past impacts to recreational opportunities within the flycatcher recovery area, there would potentially be minor, indirect, adverse impacts from critical habitat designation to some recreational opportunities and activities within designated critical habitat (e.g., fishing, speed boating, overnight camping) from the limitations and restrictions imposed on recreational activities to preserve PCEs. However, other recreational activities and opportunities would be enhanced, and could benefit from critical habitat designation (e.g., bird-watching, wildlife viewing, day hiking), because of increased riparian habitat conservation or maintenance. The indirect adverse impacts to recreation would be similar to those past impacts described above: some recreational restrictions in designated critical habitat during flycatcher nesting season and/or potential closure of designated critical habitat to some forms of recreation.

### *3.2.11.3 ALTERNATIVE B*

When compared to Alternative A, designation of critical habitat under this alternative would decrease the number of re-initiated section 7 consultations for recreational activities and/or construction and decrease the number of new section 7 consultations. The effects on flycatcher PCEs and on recreation resources would be similar to those described under Alternative A because areas excluded under Alternative B would continue to conserve flycatcher PCEs, and conservation or maintenance of flycatcher PCEs within exclusion areas managed under HCPs would adversely limit or constrain recreational opportunities and activities in the same ways as they would within designated critical habitat.

### **3.2.12 HEALTH AND SAFETY**

Two health and safety issues have been identified that are related to the proposed designation of critical habitat for the flycatcher: fugitive dust and vector-borne illness. The periodic drawdowns and hydrological conditions at Isabella Lake, California produce suitable flycatcher nesting habitat in association with vegetation immersed in and/or overhanging standing water and saturated soil (USFS 2000). Thus, lake level management provides habitat for the flycatcher suitable for designation as critical habitat. Drawdown of water-storage reservoirs, particularly small- and medium-sized impoundments that are prone to relatively quick drawdowns due to their smaller volumes, expose lakebed sediments. These lakebed sediments can produce fugitive dust when they dry and become airborne during high winds. Fugitive dust contributes to air pollution, and a fugitive-dust concern has been identified at Isabella Lake, California, where fine alkaline sediments from the exposed lakebed periodically produce fugitive dust.

Critical habitat for the flycatcher includes areas of slow-moving or stagnant open water and/or moist, saturated soils. These areas are potential nesting sites for mosquitoes and other insects that can act as vectors for various diseases, particularly encephalitis and West Nile virus (WNV). The movement of WNV into the range of the flycatcher is a recent phenomenon (Caffrey et al. 2005) and the overall future threat of WNV to human health in the Southwest is not fully understood (Naugle et al. 2004). When expanding urban and suburban developments begin to encroach on stream segments exhibiting marshy/swampy habitats occupied by the flycatcher or suitable for

occupation by flycatchers (i.e., critical habitat), the potential for conflict with human health concerns is created. However, increased water levels in lakes and reservoirs can also increase mosquito populations.

The city of Mesquite, NV, for example, has requested that the BLM fill in low-lying riparian wetlands on land it manages along the Virgin River adjacent to recently developed suburban areas within the city limits. Yet many of these same low-lying riparian wetlands support small nesting populations of flycatchers and the entire Virgin River corridor adjacent to Mesquite is proposed critical habitat (personal communication, David Waller, BLM Las Vegas, NV, 2004).

#### *3.2.12.1 NO ACTION ALTERNATIVE*

Under the No Action Alternative, the impacts on health, safety, and management activities to control vector-borne diseases within and along the riparian corridors of the recovery area would not change, as the section 7 consultation process would only be initiated for "may affect" determinations of effects on flycatchers. No section 7 consultations would be conducted pursuant to the critical habitat provisions of the ESA. The number of potential consultations would continue to be the same as under current conditions.

#### *3.2.12.2 ALTERNATIVE A*

Critical habitat designation would require re-initiation of section 7 consultations for insect control and other health and safety actions. Designation would also result in an increase in the number of additional section 7 consultations for proposed insect control actions and other health and safety actions affecting flycatcher critical habitat. Re-initiated consultations would be conducted for ongoing actions affecting designated critical habitat. Additional consultations would be conducted, beyond those that would be conducted without critical habitat designation, because federal action agencies would consult on activities in areas designated as critical habitat that previously they may not have considered to be occupied and/or because of the additional information, guidance, or clarification in the critical habitat proposal.

The likely beneficial effect of increasing the number of section 7 consultations would be implementation of conservation measures to preserve or maintain flycatcher PCEs. These would include maintenance of insect populations by limiting or restricting insect control affecting designated critical habitat. Indirect, long-term, adverse impacts to health and human safety would be 1) the potentially increased risk of WNV transmission to humans along designated stream segments adjacent to urban or suburban areas because habitat that exhibits flycatcher PCEs includes moist soil and inundated habitats that support insect vector populations upon which flycatchers feed, and 2) the increased risk of wildland fire within WUIs in or adjacent to designated critical habitat from riparian vegetation PCE conservation/maintenance.

The long-term impacts of WNV to human health and safety from flycatcher critical habitat designation are unknown at this time because other man-made standing water sources suitable for mosquito nesting exist (e.g., flood-irrigated areas, bird feeders, discarded tires, etc.) that overwhelm or subsume all possible natural standing water sources, and the demographics and transmission ecology of the spread of WNV are presently unknown. As data are currently lacking on WNV transmission and the epidemiology of the virus, further study of the issue would be useless.

The risks of wildland fire are a health and safety concern, particularly in Wildland-Urban Interface (WUI) areas and areas where vegetation fuel loading has created conditions for

catastrophic fire. These issues, along with fire management and fire-related health and safety risk reduction are discussed in Section 3.2.6.

### *3.2.12.3 ALTERNATIVE B*

Designation of critical habitat under this alternative would decrease the number of re-initiated section 7 consultations for potential insect control actions and decrease the number of new section 7 consultations, when compared to Alternative A. Alternative B would exclude approximately 30,445 acres from critical habitat designation. Compared to the No Action Alternative, the area subject to section 7 consultations regarding potential insect control actions would increase, as would the risk of WNV transmission to humans, although less than Alternative A. However, since the ESA 4(2)(b) exclusion areas excluded under Alternative B would still be subject to limitations and restrictions with respect to insect control actions and the risk of WNV transmission, the degree of impacts, both beneficial and adverse, for Alternatives A and B would be similar for health and human safety because exclusion areas would still be subject to insect control limitations and restrictions (i.e., draining, insect spraying).

### **3.2.13 NATIONAL SECURITY**

There are 4 DoD installations and/or reservations within the flycatcher recovery area that include critical habitat within their boundaries. Within the Coastal California Recovery Unit – San Diego Management Unit, DoD installations include: 1) the Camp Pendleton Marine Corps Base with 4320 acres of proposed critical habitat; and 2) the Naval Weapons Station – Fallbrook Annex with 104 acres of proposed critical habitat. Within the Lower Colorado Recovery Unit – Bill Williams Management Unit, an unnamed artillery range/reservation near Upper Alamo Lake, Arizona, includes 4828 acres of proposed critical habitat. Within the Basin and Mojave Recovery Unit – Mojave Management Unit, an unnamed DoD area of 24 acres of proposed critical habitat lies within the Mojave River Forks stream segment.

It should be noted, and a distinction made, that, though the Army Corps of Engineers (ACOE) is a component of the DoD, its mission is: 1) planning, construction, and operating water resources and other civil works projects involving navigation, flood control, environmental protection, disaster response, etc.; and 2) designing and managing construction of military, federal, and other defense agencies. While dam operations could be considered a national security issue, the ACOE is not assumed to have national security as its primary mission. Thus, the impacts on ACOE projects from critical habitat designation have not been analyzed in this environmental assessment in the context of national security.

In the period 1994–2004, activities subject to formal section 7 consultations involving potential effects to the flycatcher have occurred for three actions involving the DoD in Arizona and California. The anticipated take was 4 flycatcher territories at Camp Pendleton, California.

#### *3.2.13.1 NO ACTION ALTERNATIVE*

Under the No Action Alternative, the impacts on national security within and along the riparian corridors of the recovery area would not change, as the section 7 consultation process would only be initiated for "may affect" determinations of effects on flycatchers. No section 7 consultations would be conducted pursuant to the critical habitat provisions of the ESA. The number of potential consultations would continue to be the same as under current conditions.



### *3.2.13.2 ALTERNATIVE A*

Critical habitat designation would require re-initiation of section 7 consultations for ongoing projects affecting flycatcher critical habitat on DoD-controlled land. Designation would also result in an increase in the number of additional section 7 consultations for proposed projects affecting designated flycatcher critical habitat on DoD-controlled land. Additional consultations would be conducted, beyond those that would be conducted without critical habitat designation, because federal action agencies would consult on activities in areas designated as critical habitat that previously they may not have considered to be occupied and/or because of the additional information, guidance, or clarification in the critical habitat proposal.

The likely effect of increasing the number of section 7 consultations would be the conservation or maintenance of flycatcher PCEs because "may affect" determinations of proposed activities analyzed through the section 7 process would require mitigation to conserve designated critical habitat.

The impacts on national security within the DoD areas that contain critical habitat stream segments would be negligible under this alternative. If it is in the interests of national security, provisions in the Defense Authorization Act permit the exclusion of critical habitat designation on lands "owned or controlled" by the DoD, and to forego the implementation of conservation measures within endangered species critical habitat. Through the enactment of Public Law No. 108-136 (Nov. 2003), the National Defense Authorization Act amended section 4(b)(2) of the ESA to include consideration of the impacts of critical habitat designation on national security. It also amended section 4(a)(3) of the ESA to exempt DoD lands from critical habitat if an adequate Integrated Natural Resource Management Plan (INRMP) is in place.

### *3.2.13.3 ALTERNATIVE B*

Alternative B would exclude approximately 4012 acres of DoD lands from proposed critical habitat designation, when compared to Alternative A. The impacts to national security under Alternative B would be the same as those described under Alternative A, as DoD areas can be excluded from designation as critical habitat and excluded from implementation of conservation measures within endangered species critical habitat.

## **3.2.14 TRIBAL TRUST RESOURCES**

Tribal trust resources are natural resources retained by or reserved for Indian tribes through treaties, statutes, judicial decisions, and executive orders. Indian lands are not federal public lands or part of the public domain, and thus are not subject to public federal land laws. Indian tribes manage Indian land in accordance with tribal goals and objectives, within the framework of applicable laws; however, the United States is entrusted with tribal trust resources for the benefit of Indian tribes.

Under the Proposed Rule, Indian tribal trust resource areas within the flycatcher recovery area boundary (including 15 Indian Tribes) possess proposed critical habitat. Table 3.11 shows the number of acres of proposed critical habitat that are on Indian Reservations within the recovery area.

**Table 3.11. Critical Habitat Within Tribal Reservations**

Recovery Unit	Management Unit	Indian Reservation	Critical Habitat Acres
Coastal California	San Diego	Pala	369
		Rincon	81
		La Jolla	220
Basin and Mojave	Salton	Santa Ysabel	28
Lower Colorado	Middle Colorado	Hualapai	1,721
	Hoover-Parker	Fort Mojave	3,825
		Chemehuevi	4,522
	Parker Southerly International Border	Colorado River	469
		Fort Yuma	52
Gila	Verde	Yavapai Apache	166
		Indian Allotments	38
	Upper Gila	San Carlos	8,888
	Middle Gila/San Pedro	Indian Allotments	186
Rio Grande	Middle Rio Grande	Isleta	2,016
	Upper Rio Grande	San Juan	1,744
		Santa Clara	1,616
		San Ildefonso	1,073
Total			27,014

In the period of 1994-2004, the total number of tribal activities subject to formal section 7 consultations involving potential effects to the flycatcher are difficult to completely determine because tribal lands may be impacted by projects conducted by other agencies, and typically, other federal agencies consult on behalf of tribes. However, there were 3 formal consultations for projects specifically known to involve tribes involving the flycatcher in Nevada (Middle Colorado Management Unit), Arizona (Upper Gila Management Unit), and Colorado (San Juan Management Unit). The anticipated take of the flycatcher was 1 pair of flycatcher from habitat loss/deterioration and 1 flycatcher from habitat loss.

#### *3.2.14.1 No ACTION ALTERNATIVE*

Under the No Action Alternative, the impacts on tribal trust resources within and along the riparian corridors of the recovery area would not change, as the section 7 consultation process would only be initiated for "may affect" determinations of effects on flycatchers. No section 7

consultations would be conducted pursuant to the critical habitat provisions of the ESA. The number of potential consultations would continue to be the same as under current conditions.

#### *3.2.14.2 ALTERNATIVE A*

The proposed designation of critical habitat under Alternative A would include approximately 27,014 acres of stream segments on tribal lands. This alternative would increase the number of re-initiated section 7 consultations for ongoing projects affecting critical habitat stream segments and increase the number of additional section 7 consultations for projects affecting designated critical habitat on tribal lands. Additional consultations would be conducted, beyond those that would be conducted without critical habitat designation, because federal action agencies would consult on activities in areas designated as critical habitat that previously they may not have considered to be occupied and/or because of the additional information, guidance, or clarification in the critical habitat proposal.

The likely effect of increasing the number of section 7 consultations would be the conservation or maintenance of flycatcher PCEs. Indirect, potentially adverse impacts that could result from critical habitat designation on tribal trust lands would be: 1) the perception of increased federal control and involvement in tribal land management by the tribes and pueblos whose lands would contain designated critical habitat stream segments; and 2) a perception by the tribes and pueblos of a decreased control or ability to management their lands for their own benefit.

#### *3.2.14.3 ALTERNATIVE B*

Designation of critical habitat under this alternative would decrease the number of re-initiated section 7 consultations on tribal lands and decrease the number of additional section 7 consultations on tribal lands, when compared to Alternative A. The impacts to PCEs would be the same as Alternative A, as exclusion areas would include those areas containing critical habitat stream segments that are managed under Tribal Conservation Plans. The potential for the indirect adverse impacts described under Alternative A would be lower under Alternative B because of the fewer acres of critical habitat within tribal trust lands that are federally managed.

Note that the USFWS policy regarding critical habitat on tribal lands is that natural resources are better managed under tribal authorities, policies, and programs than through federal regulation. The USFWS is presently receiving habitat management plans for the conservation of the flycatcher from tribes and pueblos, and considering Safe Harbor Agreements with tribes and pueblos that detail habitat conservation measures. Based on the outcomes of critical habitat management plans developed between the USFWS, and tribes and pueblos, it is likely that additional areas will be considered for exclusion in the final rule. The effects of designating additional exclusion areas on tribal lands would be similar to those described above, but to a greater degree. If agreed upon by the USFWS and tribes within the recovery area, excluding more acres of stream segments from critical habitat designation through tribal and pueblo habitat management and conservation plans would further reduce the numbers of re-initiated section 7 consultations for on-going projects and new section 7 consultations for new projects, and further reduce the potential for indirect adverse impacts to tribes described under Alternative A.

### 3.2.15 ENVIRONMENTAL JUSTICE

As required by Executive Order 12898, a project must be evaluated to determine if any disproportionately high and adverse health or environmental effects would occur on minority or low-income populations from implementation of the Proposed Action or alternatives.

The 100-county southwestern willow flycatcher recovery area includes all of Arizona and portions of five other states: California, Nevada, New Mexico, Utah, and Colorado. In Arizona, all counties are within the analysis area. California counties include: Inyo, Tulare, Kings, San Luis Obispo, Santa Barbara, Kern, Ventura, Los Angeles, Orange, San Bernardino, San Diego, Riverside, and Imperial. Colorado counties within the analysis area are: Montezuma, La Plata, Archuleta, Conejos, Costilla, Alamosa, Rio Grande, Mineral, and San Juan. In Nevada, counties include: Esmeralda, Nye, Lincoln, and Clark. New Mexico counties include: San Juan, Rio Arriba, Taos, Mora, San Miguel, Santa Fe, Los Alamos, Sandoval, McKinley, Cibola, Bernalillo, Valencia, Torrance, Guadalupe, DeBaca, Lincoln, Socorro, Catron, Grant, Sierra, Hidalgo, Luna, Dona Ana, Otero, Eddy, and Chaves. In Utah, counties within the analysis area include: Garfield, Kane, Washington, and San Juan. Based on Census 2000 population estimates for 2003, the most people living within the analysis area are in California, followed by Arizona, New Mexico, Nevada, Utah, and Colorado. Table 3.12 lists state total population and the state population within the analysis area.

It should be noted that the socioeconomic analysis in this EA includes the 100-county area within the flycatcher recovery area. A similar analysis, describing the socioeconomic profile of the critical habitat area, is included in the USFWS's Final Economic Analysis of Critical Habitat Designation for the Southwestern Willow Flycatcher (Industrial Economics 2005). That report describes the 37 counties in the recovery area that contain proposed critical habitat stream segments. The economic data presented below differ from those presented in the Final Economic Analysis as the scope of the Final Economic Analysis differs from the scope of this EA (see Section 3.1.4 Methodology), but the conclusions are similar.

**Table 3.12.** 2003 Estimated State Populations Within the Southwestern Willow Flycatcher Recovery Area

State	Total State Population	Estimated 2003 Population Within the Southwestern Willow Flycatcher Recovery Area	% Total State Population
Arizona	5,580,811	5,580,811	100%
California	35,484,453	22,259,868	63%
Colorado	4,550,688	122,773	3%
New Mexico	1,874,614	1,726,002	92%
Nevada	2,241,154	1,617,380	72%
Utah	2,351,467	128,614	5%
<b>Total</b>	<b>52,083,187</b>	<b>31,435,448</b>	

Source: US Census 2000

The estimated percentage of the population below the poverty level (based on Census 2000 data) in the counties within the recovery area is the same as statewide in Arizona. In California, Colorado, Nevada, and Utah the poverty levels are higher in the recovery area than statewide. In New Mexico the poverty level is lower in the recovery area than statewide. These data are depicted in Table 3.13 below.

**Table 3.13.** 2000 Poverty Levels within the Southwestern Willow Flycatcher Recovery Area

State	State-wide Poverty		Southwestern Willow Flycatcher Recovery Area Poverty Levels	
	Below Poverty Level	% of State Population	Below Poverty Level	% of State Population
Arizona	646,762	12.5	646,762	12.5
California	4,304,909	12.7	2,940,191	13.9
Colorado	384,830	8.9	18,088	15.3
Nevada	194,787	9.4	143,868	10.2
New Mexico	309,103	17.3	282,163	16.9
Utah	198,434	8.8	15,498	13.4

Source: Census 2000

Census 2000 data for minority groups within the flycatcher recovery area and statewide are shown in Table 3.14. The data indicate that the proportion of minority groups residing in the recovery area are the same in Arizona, less in California, Colorado, Nevada, and New Mexico than statewide, and greater only in Utah. Hispanic populations were the same in Arizona, and larger in the recovery area compared to statewide populations in California, Colorado, and New Mexico. In Utah and Nevada the Hispanic population within the recovery area was lower than statewide populations.

**Table 3.14.** Minority Populations Within the Southwestern Willow Flycatcher Recovery Area

State	Statewide Minority Groups (%) <sup>1</sup>	Southwestern Willow Flycatcher Recovery Area (%)	Statewide Hispanic (%)	Recovery Area Hispanic (%)
Arizona	19.1	19.1	25.3	25.3
California	18.6	11.7	32.4	38.9
Colorado	7.0	3.8	17.1	28.4
Nevada	12.6	7.1	19.7	11.5
New Mexico	12.5	10.8	42.1	44.3
Utah	3.8	15.6	9.0	3.5

<sup>1</sup>Minority groups include peoples of African, American Indian, and Asian origin.

On average, census data indicate that a higher percentage of persons below the poverty level, racial minorities, and Hispanic populations reside within the six-state flycatcher recovery area compared to the areas outside of the recovery area in the affected states. Both socioeconomic analyses (the Economic Analysis and this EA) of population characteristics conclude that, in general, the recovery area and those counties that contain proposed flycatcher critical habitat have lower per capita income and higher poverty levels than state averages. Under the action alternatives, approximately 376,225 acres of proposed critical habitat would be affected under Alternative A and approximately 345,780 acres of proposed critical habitat would be affected under Alternative B, and a substantial proportion of the proposed critical habitat areas are under the management of federal, state, and tribal agencies. The potential for disproportionate impacts to Hispanic populations, and to below poverty level-populations are unknown from designating these acreages as critical habitat (and the increased number of section 7 consultations for on-going and proposed actions that "may affect" these designated areas). This is because 1) designating critical habitat does not directly restrict land management and/or land use activities, 2) site-specific riparian-associated human demographics are unknown, and 3) the outcomes of section 7 consultations and the subsequent impacts upon these populations cannot be predicted. Further study of the unknown impacts to minority and/or low-income populations of critical habitat designation would be useless because of the unpredictability of section 7 consultation outcomes (and their subsequent impacts on these populations) even if a detailed demographic study or characterization were conducted.

### *3.3 CUMULATIVE IMPACTS*

Cumulative impacts are the past, present, and reasonably foreseeable future actions that could have an additive effect on the environment when combined with the impacts of the proposed action, but are not part of the proposed action. Actions that could have cumulative impacts would include: 1) the section 7 consultation outcomes and subsequent effects on other species; 2) the effects of designated critical habitat for other species; and 3) the effects of land management plans. The cumulative impacts of these actions would probably be negligible to minor, as they would primarily involve re-initiation of section 7 consultations, initiation of additional section 7 consultations, and implementation of subspecies conservation measures if mitigation were required.

### *3.4 IRREVERSIBLE AND IRRETRIEVABLE IMPACTS*

The designation of critical habitat would have no impact on the irreversible commitment of resources. As described above, the action of designating critical habitat is programmatic, not site-specific, and does not, in itself, have impacts that could irreversibly impact resources. There could be impacts on the irretrievable commitment of resources if the designation of critical habitat causes an increase in additional section 7 consultations and/or re-initiates section 7 consultations for on-going projects within designated critical habitat. There could potentially be irretrievable commitments of USFWS time and funds to conduct section 7 consultations with project proponents in order to maintain designated critical habitat.

## 4.0 CHAPTER 4 – ANALYSIS OF SIGNIFICANCE

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The primary purpose of an environmental assessment is to determine whether or not a proposed action would have significant impacts to the human environment. If significant impacts are found to result from a proposed action, then an environmental impact statement is required (40 CFR §1502.3). Whether or not a proposed action exceeds a threshold of significance is determined by analyzing the context and the intensity of the proposed action (40 CFR §1508.27). Context refers to the setting of the proposed action, which could include the nation or an affected region, the affected interests, and the locality.

Intensity refers to the severity of the impacts. Under Council of Environmental Quality (CEQ) regulations, whose responsibility it is to ensure compliance with the National Environmental Policy Act (NEPA), intensity is determined by considering ten criteria (CFR 40 §1508.27[b]): 1) beneficial and adverse impacts; 2) the degree of impacts to health and safety; 3) impacts to the unique characteristics of the area; 4) the degree to which the impacts would likely be highly controversial; 5) the degree to which the proposed action would impose unique, unknown or uncertain risks; 6) the degree to which the proposed action might establish a precedent for future actions with significant effects or represent a decision in principle about a future consideration; 7) whether the proposed action is related to other actions, which cumulatively could produce significant impacts; 8) the degree to which the proposed action might adversely affect locales, objects, or structures eligible for listing in the National Register of Historic Places; 9) the degree to which the proposed action might adversely affect an endangered or threatened species or its habitat, as determined to be critical under the Endangered Species Act of 1973; and 10) whether the proposed action threatens a violation of federal, state, or local law.

The context of short- and long-term impacts of the proposed designation of flycatcher critical habitat includes the 21 Management Units within 5 Recovery Units, a 100-county area in 6 states and stream segments that encompass designated critical habitat. Impacts of proposed critical habitat designation at these scales would be minor.

Potential impacts to environmental resources, both beneficial and adverse, would be minor. Analyses of impacts of critical habitat designation on sensitive resources within stream segments proposed as flycatcher critical habitat were conducted and discussed in Chapter 3 of this EA, and it was determined that designation of critical habitat would have both adverse and/or beneficial impacts on those resources. These analyses concluded that the adverse impacts of critical habitat designation would not be significant. .

There would be minor impacts to public health or safety from the proposed designation of critical habitat and no impacts to unique characteristics of the geographic area. The increased risk of WNV transmission and the increased risks of wildland fire were analyzed within the context of critical habitat designation. The increased risks of insect-vector-borne WNV caused by critical habitat designation were determined to be minor in comparison to risks created by man-made conditions. Impacts of wildland fire on public health and safety were determined to be minor, as wildland fire suppression and wildland fire management within WUI areas would not be significantly impeded by the designation of critical habitat.

Potential impacts to the quality of the environment are not likely to be highly controversial and the impacts do not pose any uncertain, unique, or unknown risks. Impacts are not likely to be highly controversial because, as the analyses of impacts of critical habitat designation has

concluded, the quality of the environment would not be significantly modified from current conditions. This analysis was based on past consultations, past impacts of flycatcher conservation on activities within the flycatcher recovery area, and the likely future impacts from flycatcher conservation. Past section 7 consultations within designated critical habitat would likely be re-initiated. New activities would result in section 7 consultations. A number of activities, including livestock grazing, wildland fire, exotic vegetation management, and recreation would likely have some flycatcher-conservation-related constraints or limitations imposed on them.

Impacts to water management and resource activities are not expected to be controversial because, as discussed in the analysis of impacts on water resources, the constraints on current water management activities are expected to be limited.

It should be noted that, in contrast to the expected non-controversial impacts on water management from designating flycatcher critical habitat, the Tenth Circuit Court ruling in Middle Rio Grande Conservancy District v. Norton, 294 F.3d 1220 (2002) found that there were significant impacts to water management from designation of critical habitat for the endangered silvery minnow (minnow). At issue was the amount of water required for silvery minnow designation and its impacts on irrigated farmland in the Rio Grande Valley, as well as the possible failure of flood protection that could pose a health and safety issue. The court case is illustrative, through comparison of critical habitat designation for the two species, of the non-controversial impacts of flycatcher critical habitat designation on water management activities.

1) Minnow conservation requires a continuous, stable, water flow regime of sufficient quality and quantity (estimated within the Recovery Plan of up to 200 cubic feet per second [cfs] within a stream reach) to maintain food and cover, movement and growth, oxygenated water, and regulated water temperature. In contrast, the flycatcher only requires sufficient water to support riparian vegetation and insect populations, not a stable, required discharge level, and instability is beneficial (through processes of flooding, drought, inundation, and changes in floodplain and river channels) for the maintenance and creation of flycatcher habitat.

2) Once common in several western rivers, the minnow currently occupies only 5% of its historic range. Approximately 70% of the species population lives within a single reach of the Rio Grande River. The minnow could be exterminated by a single naturally occurring chance event. Critical habitat was originally designated along a 163-mile length of the mainstem Middle Rio Grande. In contrast, flycatcher habitat is widely dispersed, highly variable in topography, elevation, and vegetation habitat types, and current populations are estimated at over 1,100 territories in five states (Sogge et al. 2003a).

3) The federal agencies charged with management of Rio Grande water must avoid any action that could adversely modify critical habitat. As the Middle Rio Grande is fully appropriated, designation of critical habitat for the minnow could result in a reallocation of water back into the riverbed and curtailment of river maintenance operations and loss potential loss of farmland irrigation. In contrast, flycatcher critical habitat designation would likely result in conservation measures (as outcomes of consultations) to maintain flycatcher PCEs. Based on past consultation outcomes, these conservation measures would not likely impede water management or operations. It should be noted that the economic analysis (Industrial Economics 2005) of the flycatcher critical habitat designation proposal evaluates a scenario (Scenario 2) that projects what impacts to water resource projects would result if courts required action agencies to release



water from impoundments to avoid inundating flycatcher habitat. In the majority of previous consultations, however, this has not occurred.

The designation of critical habitat by the USFWS for the conservation of endangered species is not a precedent-setting action with significant effects. The agency has designated critical habitat for numerous other species. Therefore, designating critical habitat for flycatchers is not a precedent-setting action. There would not be any significant cumulative impacts because, as described above in Section 3.3, the cumulative impacts would be limited to section 7 consultation outcomes and subsequent effects on other species, the effects of designated critical habitat for other species, and the effects of land management plans.

Critical habitat designation is not likely to affect sites, objects, or structures of historical, scientific, or cultural significance because any such potential impacts would be addressed by federal and state laws enacted to protect and preserve these resources.

The Proposed Action to designate critical habitat for flycatcher would have long-term beneficial effects for this endangered subspecies. The purpose of the Proposed Action is to re-designate critical habitat for the flycatcher, a subspecies listed as endangered under the Endangered Species Act. Critical habitat designation would have long-term beneficial conservation-related impacts on the flycatcher subspecies survival and recovery through maintenance of PCEs.

Proposed critical habitat designation would not violate any federal, state, or local laws. The designation of critical habitat is required by law in order to comply with the Endangered Species Act and to comply with a U.S. District Court order.

## **5.0 CHAPTER FIVE – PREPARERS**

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This environmental assessment was prepared by SWCA® Environmental Consultants, Inc., under contract to the U.S. Fish and Wildlife Service, Region 2. The economic analysis was prepared by Industrial Economics, Inc.

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